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THE AIR FORCE
LAW REVIEW

THE MASTER ENVIRONMENTAL LAWYER'S EDITION

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Volume 31 1989

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THE AIR FORCE LAW REVIEW

AFRP 110-1

The Air Force Law Review is a publication of the Office of The Judge Advocate General, United States Air Force. It is published semiannually by the Air Force Judge Advocate General School as a professional legal forum for the publication of articles of interest to Air Force judge advocates, civilian attorneys, and other military lawyers. The *Law Review* encourages frank discussion of relevant legislative, administrative, and judicial developments.

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Cite this *Law Review* as 31 A.F.L. REV. (page number) (1989).

Official government requests for additional free copies of the *Law Review*, not under the depository program, should be addressed to the Editor, *The Air Force Law Review*, Air Force Judge Advocate General School (CPD/JAL), Maxwell Air Force Base, Alabama 36112-5712.

This publication may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Contact the Superintendent of Documents with problems about subscriptions or the depository program.

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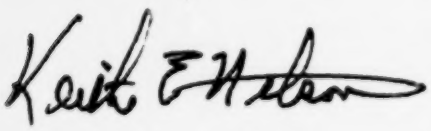
Foreword

It is my pleasure to present this Master Environmental Lawyer's Edition of *The Air Force Law Review*. This is the third annual theme edition devoted to a single topic, following in the tradition of the Master Advocate's Edition and the Master Contract Lawyer's Edition.

The theme editions have become standard reference works, not only within the Air Force legal community, but within other governmental and civilian organizations as well. I am confident that the Master Environmental Lawyer's Edition will continue this pattern of success, because the articles contained herein were written, selected and edited with the same purpose in mind. That purpose is to serve the base-level judge advocates and civilian attorneys who are faced with problems ranging from the commonplace to the unique, but who often lack the experience and resources necessary to deal with these problems effectively.

With this in mind, we have solicited articles on the topics of most immediate importance and concern to the base-level legal community. We have focused not on grand policy issues or on challenges faced only at higher headquarters, but on the real-world areas that are confronted at nearly every installation. The contributors were chosen on the basis of their knowledge, experience, and expertise in the subject matter areas in question. These are individuals who have spent years meeting and solving environmental problems and who have the ability to convey that information to others, clearly and concisely.

This combination of topic and author selection has resulted in an edition that should serve as a resource of first resort to the base-level attorney responsible for handling an environmental legal challenge. While these articles are no substitute for the statutory, regulatory, and case law, they can help you begin your research by orienting you in the proper direction, equipped with a basic understanding of the issues and the legal boundaries within which your research will proceed. The information contained in this edition should save you and the Air Force from the fruitless exploration of many blind alleys and dead ends if you read and study and learn from these experts who have preceded you.



KEITHE E. NELSON, Major General, USAF
The Judge Advocate General

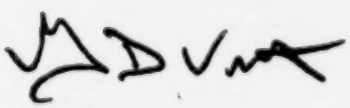
Preface

As we approach a new century, environmental challenges surround us, just as we are surrounded by the air, the land, and the water. Although many of these challenges and the difficult legal issues they raise have their roots in the practices of past generations, it falls to us to correct the damage. The variety and severity of environmental problems is daunting and constantly expanding, but we *must* rise to these challenges, and do so now, for the sake of modern society, our posterity, and the ability to perform our respective missions. To delay is to risk the future.

For that reason, I am gratified that environmental compliance is the sole subject of this edition of *The Air Force Law Review*. Our Armed Forces not only defend the cause of freedom around the globe, but also the globe itself. Our dual vital missions of protecting this nation and safeguarding the world environment are totally compatible and mutually consistent.

As the instruments of national defense grow ever more sophisticated and extend into the land, sea, air, and even space, new environmental puzzles will undoubtedly confront us. Many will be difficult and unforeseen, but all must, nonetheless, be solved. Much of the responsibility for analyzing the issues, evaluating possible solutions in the context of the law, and advising decision makers on the best approach to take, rests with the attorneys who serve in and with our Armed Forces. Judge advocates and civilian attorneys working with the military have the requisite knowledge of the legal and regulatory framework within which they must operate, and their informed participation in this process is absolutely essential to the fulfillment of our missions.

The Master Environmental Lawyer's Edition will play a major role in enhancing the already high level of competency in this critical area among the lawyers who serve in and with our nation's military. I commend it to the reading of not only every such attorney as an indispensable and unique addition to their professional education, but to other professionals whose active participation in the defense effort affects our perishable environment.



GARY D. VEST
Deputy Assistant Secretary of the Air Force for
Environment, Safety and Occupational Health

Overview

LIEUTENANT COLONEL LAURENT R. HOURCLE, USAF

This issue of *The Air Force Law Review* is dedicated to environmental law—more particularly, to environmental law compliance. Getting involved with "compliance" matters is nothing new to Air Force lawyers. Compliance has been the bread and butter of the judge advocate's responsibilities since before the first court-martial of Benedict Arnold during the Revolutionary War.[1] However, getting involved with "environmental law" compliance is a much newer challenge.

Prior to 1980, environmental law in the Air Force was an outgrowth of real estate law, with an increasing amount of litigation in the mid 1970's over the environmental impact statement requirement of the National Environmental Policy Act of 1969 (NEPA).[2] The pace quickened substantially since the late 1970's with Congress inserting broad waivers of federal supremacy into the key pollution abatement statutes, thereby subjecting military facilities to state and local envirnomental requirements.[3] President Carter also signed Executive Order No. 12,088, which set out a policy that federal facilities should lead by example in environmental compliance. President Bush reiterated the concept for a leadership role by federal agencies during the 1988 presidential campaign and since the 1988 election. What has evolved today is a highly technical, but fascinating, practice of law that combines complex administrative,[4] Constitutional[5] and fiscal law[6] issues, criminal liability,[7] and science and technology. Above all this complexity, however, is an overriding need to find practical solutions.

Good practical solutions to environmental problems are most often forged through interdisciplinary efforts. Such efforts bring together diverse Air Force staff agencies, federal and state representatives, and citizens to craft strategies that meet mission requirements and protect the health and safety of all those who live and work on or around Air Force installations. Environmental law has evolved from an area based on the common law of real property and torts to a highly complex regulatory discipline, presenting the challenge of implementing technical requirements that were often drafted without full consideration for unique military requirements and circumstances.

Lieutenant Colonel Hourcle (B.S., Boston University; M.A., Michigan University; J.D., Duke University; LL.M., George Washington University) is Chief Environmental Counsel for the Department of Defense, General Counsel's Office, Washington, D.C. He is a member of the North Carolina State Bar.

1. Benedict Arnold was court-martialed not for his treason at West Point, but for alleged use of his military position and authority for private gain. He was convicted of improperly giving a pass to a private vessel and diverting military wagons to haul private cargo from the vessel. *See* J. DIMONA, GREAT COURT MARTIAL CASES, 1 (1972).

2. 42 U.S.C. §§ 4321–47.

3. *See* Lotz, *Federal Facility Provisions of Federal Environmental Statutes: Wavier of Sovereign Immunity for "Requirements" and Fines and Penalties*, 31 A.F.L. REV. 7 (1989).

4. *See* Van Zandt, *Defense of Environmental Issues in the Administrative Forum*, 31 A.F.L. REV. 183 (1989).

5. *See* Lotz, *supra* note 3; *see also* Benton & Baur, *Applicability of Environmental "Fees" and "Taxes" to Federal Facilities*, 31 A.F.L. REV. 253 (1989).

6. *See* Benton & Baur, *supra* note 5; *see also* Lundy, *Department of Defense Liability for State Oversight Costs Under CERCLA 107*, 31 A.F.L. REV. 145 (1989) and Abbott, *Environmental Audits: Pandora's Box or Aladdin's Lamp?*, 31 A.F.L. REV. 225 (1989).

7. *See* Bartus, *Federal Employee Personal Liability Under Environmental Law: New Ways for the Federal Employee to Get in Trouble*, 31 A.F.L. REV. 45 (1989).

An example of how differing military circumstances sometimes do not fit into the normal national compliance framework is in the overlap of remedial and corrective action authority. The Air Force has the goal to protect the environment and the people who live and work in it from the hazards associated with cleaning up those areas where hazardous waste has been disposed in an unsafe manner. This has been such a high priority national goal that Congress has created not one, but three statutory structures to meet that objective. (1) The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)[8] was amended in 1986 to include specific provisions dealing with federal facilities; (2) A program under the Resource Conservation and Recovery Act (RCRA),[9] that mandates, in essence that, if a "facility" requires a hazardous waste permit, the permit applicant must identify its old disposal sites and "remediate" them; and (3) The Defense Environmental Restoration Program[10] is a program managed by the Department of Defense (DOD) to identify and correct past disposal problems.

There is overlap and often conflict among the three programs, notwithstanding their common goal. Too often, these programs have different strategies, requirements, and people in charge because they evolve from different statutory bases. As an example, the RCRA definition of "facility"[11] is a source of much of the confusion and is of great concern in the DOD effort to clean up some 5,000 sites under the Defense Environmental Restoration Program under a worst-first priority basis.

The RCRA "corrective actions" program[12] is designed to force industrial operators who use hazardous materials and generate hazardous waste to perform a fence-to-fence search of their facilities to identify where hazardous wastes may have been disposed in the past. The facility operator must then enter into a schedule to clean them up as a condition to its new hazardous waste permit. This is a simple, and certainly noble objective with which few would disagree. The problem is that a fence-to-fence survey at an installation such as Eglin Air Force Base, Florida, would cover an area fifty miles long and twenty-five miles wide. Worse, Eglin is not just a permitted treatment storage or disposal activity, or even just an industrial plant. It includes office areas, family houses, a hospital, schools, protected natural resource areas (to safeguard archeological sites and endangered species) and many other facilities that make it more like a town than a foundry.

The issue is not whether the Air Force should look for the sites; this was a requirement in the DOD program before it was a RCRA requirement. Rather, the issue is how to integrate effectively a RCRA-based, permit-driven cleanup schedule into the overall DOD program. It would be easy to accept permit conditions to clean up these sites first, but that would result in DOD's overall remedial action strategy

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8. The Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601–57.

9. The Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901–87, more particularly section 3004 (u).

10. 10 U.S.C. §§ 2701–07.

11. "Facility" is not defined in the statute. The term "treatment storage or disposal facility" (TSDF) is used in RCRA section 3004(u), (42 U.S.C. § 6924(u)) as the basis for saying that any release from a solid waste management unit at a TSDF must be on a schedule for corrective action in a RCRA permit to build or operate a TSDF. RCRA section 3005 (42 U.S.C. § 6925) sets out the permit conditions for TSDF's but again does not directly define whether "facility" is intended to mean the equipment and area associated with the activity being permitted. EPA by rule has broadened the definition for 3004(u) purposes (40 C.F.R. 260.10) this regulatory interpretation was upheld in UTC v. EPA 838 F.2d 1325 (D.C. Cir. 1988). Note, however, that "facility" is defined with regard to CERCLA at 42 U.S.C. § 9601(9).

12. 42 U.S.C.§ 6924(u,v).

being based more on the happenstance of geographic proximity to a place that needs a RCRA permit rather than cleaning up the worst sites first. The RCRA program makes good sense for a carrot and stick approach to ensure industry deals with its own on-plant sites. But corporate facilities are not as large, numerous, or diverse as military installations.

There are times when it is easy to take a legalistic approach to a problem, rather than a practical approach. Too often it is possible to create formidable legal defenses to what a regulatory agency or citizens' group might want a federal agency to do. These defenses are pieces of legal work in which an attorney can take pride crafting and advocating. However, they can be counter-productive to the Air Force, its mission, and its people. Too many times, good legal defenses and good solutions are not the same. Perhaps the greatest challenge for the military lawyers in this area is to ensure they focus on doing what is right—for the Air Force, the environment, and all that the environment encompasses.

That is not just a problem for the Air Force, but for the environmental regulatory community as well. Just as the Air Force must balance environmental compliance requirements (and they *are* requirements—only the President can waive them) with issues such as mission, cost, and other resource allocation problems, so too should the regulators take a broader view of what environmental compliance entails. One of the repeated criticisms of the nation's structure for environmental compliance has been the reliance on *media specific statutes* and regulations. "Media specific" refers to statutory strategies organized around the individual receptors of the pollution: air, water, land. For example, the Clean Air Act[13] is designed to address how to achieve healthy, breathable air in the United States. The Clean Water Act[14] addresses the need for clean and healthy surface waters. The Safe Drinking Water Act[15] controls disposal of wastes into underground waters, and the Resource Conservation and Recovery Act[16] grew out of a program to improve land disposal practices for solid wastes.

The problem is that when one "medium" becomes heavily regulated, there often is a temptation to change the form of the pollution to another medium (on the theory that if you cannot dump it in the river, burn it; if you cannot do that, bury it). These can be short-term, deceptively easy fixes that cause long-term problems. Environmental regulatory agencies are often organized by media program as well. In their zeal to enforce one media program, some environmental regulators have been known to accept (and at times even suggest) solutions that can cause other, potentially greater environmental problems in another medium.

This concept is sometimes called "cross media pollution,"[17] and herein lies one of the greatest challenges for judge advocates and the Air Force in building an effective long-term compliance program. We simply cannot afford, in terms not only of dollars, but of the health and safety of our people and the continued ability of the Air Force to perform its mission, to solve one environmental problem by replacing it with another. Air Force environmental compliance needs to take to a more holistic approach. The Air Force must never allow itself to be pushed, as one air pollution control district tried to do, to agree to a change in substances for a

13. 42 U.S.C. §§ 7401–7642.
14. Also known as the Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387.
15. 42 U.S.C. §§ 300f—300j–11).
16. Also known as the Solid Waste Disposal Act, 42 U.S.C. §§ 6901–87.
17. *See* State of the Environment, an Assessment at Mid Decade, The Conservation Foundation, Washington DC, 1984.

marginal improvement in air quality, that would result in subjecting Air Force people and the environment to a greatly increased use of a known carcinogen and greatly increased generation of hazardous waste.

In driving toward a more holistic approach, the Air Force has an excellent tool in the NEPA.[18] Under NEPA, the Air Force is required to assess the full spectrum of potential environmental impact that may result from a given decision. NEPA gives the Air Force both the responsibility and the tool to avoid decisions that would be environmentally wrong in the long term.

Assessing current and future environmental compliance requirements is a complex interdisciplinary area. The Air Force is fortunate to have exceptional technical resources which can be used to solve almost any possible environmental problem. Often these resources are at higher headquarters, or at centers of expertise such as the Occupational and Environmental Health Laboratory (OEHL) (located at Brooks Air Force Base, Texas), the Engineering and Services Laboratory (part of AF Engineering and Services Center, Tyndall Air Force Base, Florida) and the three Air Force Regional Civil Engineering (AFRCE) offices (located in Atlanta, Dallas, and San Francisco). The challenge frequently is to be able to identify problems that require extra attention and get them to the right people for resolution. One thing becomes more true every day in the environmental compliance business: no one person knows all the answers. The best approach to environmental problem solving is invariably the interdisciplinary team approach.

Largely for this reason, environmental compliance in the Air Force is considered a responsibility of Command, under the auspices of Environmental Protection Committees (EPC's). Under the 1988 revision to Air Force Regulation (AFR) 19–8, the responsibility of EPC's was greatly expanded and their authority increased commensurately. A key change was giving the EPC's authority at all levels for conducting the Environmental Compliance and Management Program (ECAMP).[19] The EPC should be the focus for environmental compliance at all levels of command. Local subject area specialists within the EPC will strive to tackle problems in an interdisciplinary manner. They will also be best positioned to identify subject matter specialists throughout the Air Force who may need to become involved.

Within the Judge Advocate General's Department, the Air Force has been fortunate to have environmental law "specialist." Beginning with a single specialist in Washington, D.C. some ten years ago, the Air Force now has a cadre of some thirty attorneys at Major Commands (MAJCOM's), AFRCE's, and even some of the larger installations such as the Air Logistic centers.

Because of the Air Force's strong commitment, the Judge Advocate General's Department has the finest environmental law staff of any organization, public or private, in the country. The talents of some of these people are displayed in this volume. The articles for this special edition were selected and commissioned because they deal with timely topics of interest to the Department. The authors were selected because of their experience and expertise.

Environmental compliance is big business for the Air Force. Some 700 people work full-time in this area and thousands more part-time, with a budget of more than $500 million a year for handling environmental programs. Environmental law is an

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18. 42 U.S.C. §§ 4321–61.

19. The Environmental Compliance and Management Program (ECAMP) is the Air Force Environmental Auditing program. For a comprehensive discussion of ECAMP, see Abbott, *supra* note 6.

area where compliance is a must. Not only is it the law, pure and simple, but compliance is smart, too, and that is what is most important. Compliance protects people, whether military or civilian. It also protects the Air Force's ability to perform its mission. It ensures over the long term that the Air Force has the basic resources—air, water, and land—to operate in an ever more complex and more populous world.

Federal Facility Provisions of Federal Environmental Statutes: Waiver of Sovereign Immunity for "Requirements" and Fines and Penalties.

LIEUTENANT COLONEL RICHARD E. LOTZ, USAF

I. INTRODUCTION

Over the past two decades, Congress has passed and amended numerous statutes to protect the environment. Most of these federal statutes allow for the states either to assume the federal program or to operate their own program in lieu of the federal program once it has been approved. The result of this scheme has been to make environmental law a subject of complex regulation that is a tangle of federal and state requirements.

As a fundamental proposition, federal facilities are subject to federal laws.[1] However, absent a specific waiver of sovereign immunity, another fundamental principle is that federal facilities are not subject to state regulation. In an effort to clarify the responsibilities of federal agencies, Congress included a federal facility provision in each of the major environmental statutes. These provisions for the Clean Water Act (CWA), Clean Air Act (CAA), Safe Drinking Water Act (SDWA), and the Resource Conservation and Recovery Act (RCRA) are included in the appendix.[2] At first reading, each of these provisions look very similar to the others and seem to be very broad and all encompassing. A careful perusal reveals that, to a lesser or greater extent, each is different from the others. Court decisions have also given special meaning to some of the various words.

These federal facility provisions are determinative of the extent to which Congress has waived sovereign immunity and are the key to determining the extent to which military bases are subject to state regulatory and enforcement mechanisms. Most of the questions center around the terms "requirements" and "sanctions."[3]

Lieutenant Colonel Lotz (B.S., United States Air Force Academy; M.S., University of California at Berkely; J.D., University of Denver; LL.M., George Washington University) is Chief, Environmental Litigation, HQ USAF, Central Environmental Law Office, Washington, D.C. He is a member of the Colorado State Bar Association.

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1. Even though federal facilities are subject to federal law, a question can still arise as to how the obligation can be enforced. *See* Hoard, *Enforcement Tools Available Against Federal Facilities Violating RCRA: Is a Bigger Hammer Needed*, Vol. 3 No. 11 NAT'L ENVTL. ENFORCEMENT J., Dec. 1988–Jan. 1989 at 5; Stever, *Perspectives on the Problem of Federal Facility Liability for Environmental Contamination*, 17 ENVTL. L. REP. (Envtl. L. Inst.) 10,114 (1987); Goewey, *infra* note 5 at 546–47.

2. Clean Air Act (CAA), 42 § U.S.C. 7418; Clean Water Act (CWA), 33 U.S.C. § 1323; (RCRA), 42 U.S.C. 6961; and Safe Drinking Water Act (SDWA), 42 U.S.C. § 300j–6.

3. Other potential questions not covered in this article include whether the federal facility provision is jurisdictional, as well as substantive, whether Congress waived sovereign immunity for the application of state law to areas of exclusive federal jurisdiction, and whether federal employees are personally liable for state civil or criminal penalties. Statute specific questions include whether the federal facility provision of the CWA encompasses only surface waters, excluding ground waters; if the RCRA provision applies only to "solid waste and hazardous waste *disposal*" (emphasis added), thus excluding treatment and storage of such wastes; and whether the SDWA applies to departments and bureaus.

The first term delineates which types of state law are applicable to the federal facility. The second term determines whether the federal facility is subject to fines or penalties for violations that may have occurred. This article examines the current interpretations that have been accorded these two terms by the courts to date. In order to make this discussion more relevant for the reader, the article begins with a discussion of the fundamental principles that have emerged from judicial decisions and are applied by the courts when deciding if Congress has waived sovereign immunity.

II. WAIVERS OF SOVEREIGN IMMUNITY

In ascertaining whether Congress has waived the sovereign immunity of the United States, the Supreme Court has developed certain principles through their decisions. Founded on the Supremacy Clause and exemplified in the Plenary Powers Clause of the Constitution, the fundamental premise and starting point is "that activities of the Federal Government are free from regulation by any state."[4] The effect of this premise is reflected in the rule that "[f]ederal installations are subject to state regulation only when and to the extent that congressional authorization is clear and unambiguous."[5] As this basic rule has been applied to specific cases, other related principles have emerged. These rules of interpretation are perhaps best summarized in the case of *McClellan Ecological Seepage Situation (MESS) v. Weinberger*, where the federal court for the Eastern District of California stated:

> There cannot be a waiver of sovereign immunity unless the waiver is clear, concise, and unequivocal. *Army & Air Force Exchange Service v. Sheehan*, 456 U.S. 728, 734 (1982). When there is any doubt, waiver will not be found. Waiver cannot be implied. It cannot be assumed. It cannot be based on speculation, surmise, or conjecture. *United States v. King*, 395 U.S. 1, 4 (1969). Ambiguous language will not equate to waiver. Any limitation on the United States' consent to be sued must be strictly construed in favor of the sovereign and may not be modified by implication. *Ruckelshaus v. Sierra Club*, 463 U.S. 680, 683–85 (1983).[6]

When state regulation would be tantamount to prohibiting operation of a federal installation or would impact the public fisc, the Supreme Court has been particularly strict in its analysis of waivers of sovereign immunity. At the start of the *Hancock* opinion, the Court noted that without a permit, a source whether in compliance with substantive standards or not, was prohibited from operating. It then stated that from the record it was clear that such a prohibition on operation of nonpermitted sources would be tantamount to prohibiting operation of the federal installation.[7] With respect to the legislative history, the state-plaintiffs argued that the conference

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such as Department of Defense (DOD) and the National Guard Bureau, since only "agencies" are specified. Breen, *Federal Supremacy and Sovereign Immunity Waivers In Federal Environmental Law*, 15 Envtl. L. Rep. (Enutl. L. Inst.) 10,326,10,329 (1985); Milsten, *How Well Can States Enforce Their Environmental Laws When the Polluter is the United States Government?*, 18 RUTGERS L. J. 123, 130–31, 135–36 (1986); Stever, *supra* note 1 at 10,117–118 and n.64.

4. Hancock v. Train, 426 U.S. 167 at 178 citing Mayo v. United States, 319 U.S. 441, 445 (1943) and M'Culloch v. Maryland, (4 Wheat.) 316, 426, 4 L.Ed. 579,606 (1819).

5. EPA v. California ex. rel. State Water Resources Control Board, 426 U.S. 200, 211 (1976) citing *Hancock*, 426 U.S. at 179. *See also* Goewey, *Assuring Federal Facility Compliance with the RCRA and Other Environmental Statutes; An Administrative Proposal*, 28 WM. & MARY L. REV. 513, 520–28 (1987); Stever, *supra* note 1 at 10,116.

6. McClellan Ecological Seepage Situation (MESS) v. Weinberger, CIV 5–86–475–RAR, slip op. at 2 (E.D. Cal. June 16, 1988).

7. *Hancock*, 426 U.S. at 180.

committee, by using the Senate amendment language of "requirements" in place of the "emission standards" wording of the House bill, meant to subject federal facilities to enforcement measures not in the House bill. In rejecting this analysis, the Supreme Court found it remarkable that there was no mention of disagreement between the two bills and no reference to its having reconciled such a difference in favor of extending state enforcement procedures to federal facilities.[8] Also, the Court rejected plaintiffs' arguments that three other sections of the CAA could be read to imply that Congress intended to subject federal facilities to state permit procedures.[9] It concluded that given the "undoubted congressional awareness of the requirement of clear language to bind the United States," the CAA did not evince with satisfactory clarity an intention to subject federal installations to state permit requirements.[10]

A similar analysis was applied to the related case of *EPA v. State Water Resources Control Board*.[11] However, unlike the federal facility provision of the CAA, the CWA contained additional language stating that federal facilities were subject to requirements "including the payment of reasonable service charges."[12] Plaintiffs argued that this phrasing must mean that federal facilities are required to pay charges incident to a state permit program. Thus, Congress must have intended federal facilities to obtain state permits, otherwise there would be no reason for federal facilities to pay fees for permits they were not required to obtain. In addition to finding that there was another reasonable interpretation for the phrase that would not necessarily evidence Congress' intent to subject federal facilities to state permits, the court concluded that at the very least the language "hardly satisfie[d] the rule that federal agencies are subject to state regulation only when and to the extent Congress has clearly expressed such a purpose."[13]

More recently, the Supreme Court had the opportunity to reiterate the rules regarding interpretation of waivers of sovereign immunity in the case of *Library of Congress v. Shaw*.[14] This case was brought against the federal defendant under Title VII of the Civil Rights Act of 1964. The district court found for the plaintiff and as part of the judgment awarded the plaintiff attorney's fees in accordance with section 706(k) of the Act. The lodestar amount was increased by thirty percent to compensate counsel for the delay in receiving payment for his services. The Court of Appeals affirmed, holding that although the payment for delayed compensation was functionally equivalent to interest, the Government's immunity for payment of interest had been waived under the Act when Congress stated that a prevailing party may be allowed "attorney's fees" and that "the United States shall be liable for costs the same as a private person."[15] Under Title VII, the court noted that interest on attorney's fees could be recovered in a suit against a private employer. As an alternative, the Court of Appeals held that the "traditional rigor of the sovereign immunity doctrine" was relaxed when a statute measured the liability of the United States as being synonymous with that of a private person.[16]

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8. *Id.* at 187–89.
9. *Id.* at 191–98.
10. *Id.* at 199 citing United States v. United Mine Workers, 330 U.S., at 273.
11. EPA California ex rel. v. State Water Resources Control Board, 426 U.S. 200.
12. *Id.* at 216.
13. *Id.* at 217.
14. Library of Congress v. Shaw, 478 U.S. 310 (1986). *See also* Tucker, *Compliance by Federal Facilities with State and Local Environmental Regulations*, 25 NAVAL L. REV. 87, 94–96 (1986), citing Columbia Basin Land Protection Assoc. v. Schlesinger, 643 F.2d 585 (9th Cir. 1981), and Citizens and Landowners Against the Miles City/New Underwood Powerline v. Sec. of Energy, 683 F.2d 1171 (8th Cir. 1982).
15. *Id.*
16. *Id.* at 313–14, citing 241 U.S. App. D.C. at 361, 365, 747 F.2d at 1475, 1479.

In reversing the lower court decisions, the Supreme Court once again set forth the standard that waivers of sovereign immunity must be strictly construed.[17] The Court emphasized the fact that historically there was a long-standing rule against payment of interest by the Government and where Congress had intended to waive such immunity, they had done so expressly. Even though Congress had made the United States liable for costs, the same as a private person under the Civil Rights Act, the Supreme Court held that this was not specific enough to include interest. They stated that other statutes placing the United States in the same position as a private party had been narrowly interpreted in order to preserve immunities that the United States had enjoyed historically.[18]

III. REQUIREMENTS

Each federal facility provision of the CWA, CAA, SDWA, and RCRA subjects federal facilities to "all Federal, State, interstate, and local requirements."[19] Courts have not interpreted the term "requirements" to include any and all provisions of state, interstate, or local law.[20] In their landmark decisions of *Hancock* and *EPA v. California*,[21] the Supreme Court held that under the federal facility provisions of the CAA and CWA, as first enacted in 1970 and 1972 respectively, sovereign immunity had not been waived for procedural requirements. Thus, until Congress amended the wording of the original provisions, federal agencies did not have to obtain permits from the states. In reaching this conclusion, the Court also examined the legislative histories of the acts to determine the scope of the term "requirements" for which sovereign immunity had been waived.

The initial federal facility provision of the CAA as enacted in 1970 was the result of a House bill and a Senate amendment. Under the House bill and the House report, federal facilities were mandated to comply with "Federal, State, interstate, and local emission standards." Although the Senate amendment provided that the agencies comply with "requirements of this Act," the Senate report stated that this provision "require[d] Federal facilities meet the emission standards." Noting this interchangeable use of the terms "requirements" and "emission standards," as well as the lack of any reference to a disagreement or reconciliation in the conference report, the Supreme Court found that sovereign immunity had only been waived for state substantive requirements such as emission limitations and standards.[22] Furthermore, the Court found that the federal facility provision established the duty of federal installations to comply with state "requirements" and that the citizen suit provisions were the means for state enforcement of the prescribed duties. Thus, the Court noted as significant that under the citizen suit section, suit could only be brought for violation of certain specified schedules, limitations, and standards rather than all state implementation measures.[23]

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17. *Id.* at 318.
18. *Id.* at 319–20, citing Laird v. Nelms 406 U.S. 797 (1972) and Lehman v. Nakshian, 453 U.S. 156 (1981).
19. CWA, 33 U.S.C. § 1323; CAA, 42 U.S.C. § 7418; SDWA, 42 U.S.C. § 300j–6; RCRA, 42 U.S.C. § 6961.
20. Goewey, *supra* note 5 at 531, n. 81 quoting 1A F. Grad, Treatise on Environmental Law 4.02, at 4–109 (1985): "Given its pivotal role in each of the Statutes, it seems likely that 'requirements' is a term of art with a specialized meaning common to all four [RCRA, Noise Control Act, CAA, and CWA] statutes."
21. Hancock v. Train, 426 U.S. 167 (1976); EPA v. California ex rel. State Water Resources Control Board, 426 U.S. 200 (1976).
22. 426 U.S. at 188–90.
23. *Id.* at 196–97.

Examination of the legislative history of the CWA yielded the same result. Both the Senate bill and the House amendment provided that federal facilities "comply with Federal, State, interstate and local requirements." The Senate report described this section as "requir[ing] that Federal facilities meet ... effluent limitations."[24] In addition, the Court also examined the relationship between the federal facility provision and the citizens suit provision to support its holding that sovereign immunity had not been waived for state permitting procedures.[25]

In response to these two 1976 cases, Congress passed the RCRA and amended the federal facility provisions of the CAA, CWA, and SDWA. Clarifying language was added to the CAA, CWA, and SDWA stating that the previous language applied to "any requirement whether substantive or procedural (including any recordkeeping or reporting requirement, any requirement respecting permits and any other requirement, whatsoever)." However, the courts have found that Congress did not broaden the kinds of substantive requirements for which sovereign immunity had been waived. In *Romero-Barcelo v. Brown*, the First Circuit held that "[T]he apparent purpose of these amendments [to the federal facility provision of the CWA] was to ensure the enforceability of the applicable substantive control requirements." They further stated that they "[found] no evidence that the amendments were intended to expand the category of applicable substantive requirements."[26] Similarly, the Sixth Circuit in *United States ex rel. Tennessee Valley Authority v. Tenn. Water Quality Control Board*,[27] stated that "the 1977 amendments did not change the extent to which [the federal facility provision of the CWA] waived immunity from state or local control; it merely made it clear that where federal agencies are subject to state or local regulation they must comply with state or local procedural as well as substantive requirements."

Based upon the Supreme Court's language in *Hancock* and *EPA v. California*, as well as the limited nature of the 1977 amendments to the environmental statutes, the courts have consistently held with respect to the Noise Control Act, CWA, and RCRA that the term "requirements" is limited to objective and ascertainable state regulations. In *Romero-Barcelo v. Brown*, the Commonwealth of Puerto Rico brought suit to stop training operations by the Navy based, in applicable part, upon allegations that such activities were a violation of their criminal nuisance statute that applied to the Navy under section 4 of the Noise Control Act. Since there was no explanation of the term "requirements" by either the courts or Congress, the court examined the legislative history of the CAA which was thought to be a model for the drafters of the Noise Control Act. Concluding that the term "requirements" referred to "relatively precise standards capable of uniform application," the court found the nuisance statute did not fall within these bounds because it required a case-by-case determination of the reasonableness of a defendant's activity. This type of fact–sensitive decision making limited to a single case was held not to permit the application of specific, uniform standards necessary to qualify as a "requirement."[28]

With respect to the CWA in *State of New York v. United States*,[29] the court concluded that the term "requirements" under the federal facility provision was

24. EPA v. Calif., 426 U.S. at 214–15, and n.28.

25. *Id.* at 222–23, 227.

26. Romero-Barcelo v. Brown, 643 F.2d 835, 854 n.36 (1st Cir. 1981), *rev'd on other grounds sub nom.* Weinberger v. Romero-Barcelo, 456 U.S. 305, (1982).

27. United States ex rel. Tennessee Valley Authority v. Tennessee Water Quality Control Board, 717 F.2d 992, 997, (6th Cir. 1983) *cert. denied*, 466 U.S. 937 (1984).

28. *Romero-Barcelo*, 643 F.2d 835 at 856.

29. State of New York v. United States, 620 F. Supp 374, 383 (D.C.E.D.N.Y. 1988) *See also* Milsten, *supra* note 3 at 135–36.

coextensive with the effluent standards or limitations of the citizens' suit provision of section 505. Finding the lack of the necessary objective, administratively predetermined effluent standard or limitation or administrative order upon which to measure the prohibitive levels of pollution, the court dismissed that part of the complaint that was predicated upon violations of state water quality laws.[30] This same reasoning was adopted by the court in *Kelley v. United States*.[31] There the court dismissed claims under state laws that (1) made discharge into the waters of the state any substance which might be injurious to the public health prima facie evidence of a nuisance, and (2) provided for the State Attorney General to bring actions for the protection of the air, water, and other natural resources from pollution, impairment, or destruction. None of these provisions were found to have the requisite "objective, quantifiable standards subject to uniform application."[32]

Most recently, the above referenced cases were cited and similarly applied by the District Court in California. A citizen group had brought suit against the Air Force alleging violations of RCRA, CWA, and various state law provisions governing hazardous waste and discharges to water at McClellan AFB.[33] The court granted the Government's motion for summary judgment with respect to four of the state law claims because they were deemed not to be requirements for which sovereign immunity had been waived.[34] One was a state regulation requiring that water suppliers "protect the water resources" and another was a statute that prohibited discharges that result in "contamination," "pollution," or "nuisance." Two claims involved statutes that required reporting discharges that "could affect the quality of the waters of the state" and an initiation or change in discharges. Relying on *State of New York* and *Kelley*, the court found that all of the provisions suffered from the same lack of precision and objectivity. Plaintiffs contended that the statutes that required the filing of reports were "procedural" requirements for which sovereign immunity had been waived, rather than "substantive" requirements. Even though the court agreed that normally a reporting requirement is procedural, the court held that federal facilities could not be required to file such reports when the procedural requirement is triggered by extremely vage substantive standards.[35]

Three reported cases have involved a determination of whether a state or local law was a "requirement" under the federal facility provision of RCRA.[36] In one case the Navy was sued by a state for damages and injunctive relief when there was a release of hazardous waste from a storage tank at a commercial incineration facility. The tank was owned by a private contractor who was responsible for removing waste

30. *State of New York*, 620 F. Supp. 374 at 384–85.

31. Kelley v. United States, 618 F. Supp. 1103 (W.D. Mich. 1983). *See also* Milsten, *supra* note 3 at 134–35.

32. *United States*, 618 F. Supp. at 1108.

33. McClellan Ecological Seepage Situation (MESS) v. Weinberger, CIV 5–86–475–RAR, slip op. (E.D. Cal., June 16, 1988.)

34. *Id.* at 34–37.

35. *Id.* at 37 & n.7.

36. Dep't of Environmental Regulation v. Silvex Corp., 606 F. Supp. 159 (M.D. Fla. 1985). *See also* Milsten, *supra* note 3 at 136–37. The state hazardous waste law allegations in *MESS*, *id.* at 16–19, were dismissed because under the citizens' suit provision of RCRA, the regulation that is the subject of enforcement must have become effective pursuant to RCRA. Since the interim authorization of California to administer their state hazardous waste program in lieu of the federal program had expired and because California never had authorization with respect to most of the provisions involved, the court held that such regulations could not be effective pursuant to RCRA. Other cases have concerned a determination whether fines or penalties are requirements for which sovereign immunity has been waived. This topic is discussed *infra* at 9–15.

materials at a naval air station. State law provided that the Department of Environmental Regulation could take emergency action to abate an imminent hazard resulting from the spillage of hazardous waste, and that those who owned or possessed the waste were strictly liable for removal costs and resource damage. The court found that the legislative history and case law for the other federal environmental statutes strictly defined requirements as synonymous with state objective regulations.[37] In the instant case, the court noted that the state did not seek to hold the Navy liable for failure to meet any specified state requirements and the statutes themselves were not requirements. The court stated it was at best ambiguous whether the federal facility provision of RCRA subjected the Navy to liability under such state statutes. Therefore, the Navy was dismissed from the action.[38]

In the second case, a city ordinance required each producer of solid waste refuse to obtain disposal services from the city or its franchisee.[39] Plaintiff had been granted an exclusive franchise by the city to collect and dispose of such refuse. Two federal facilities determined that a monetary savings could be realized by requesting bids for such services and awarding the contract competitively. When plaintiff was not awarded the contract, he brought suit. After defendants appealed from an adverse decision by the district court, the Ninth Circuit considered the issue as to whether or not the city ordinance in question was a "requirement" under RCRA that the two federal facilities had to follow. After a brief examination of the legislative history, the Circuit Court concluded that the term "requirement"was not just limited to substantive standards as in *Hancock* and *EPA v. California*, but also included the procedural means by which those standards were achieved. In addition, they found that the legislative history expressed a pervasive concern by Congress that state and local authorities attempt to establish comprehensive systems for solid waste disposal and collection, including exclusive or unitary solid waste disposal systems. The state's statutory solid waste management plan had been prepared in accordance with RCRA and approved by federal EPA. Finding that the city ordinance fit with the statutory framework because exclusive franchises were clearly contemplated by the state plan, the circuit held that the federal facility provision of RCRA required federal agencies to comply with local arrangements for solid waste collection and disposal.

Third and most recently, a decision came from the district court in Colorado.[40] A hazardous waste disposal pond located within Rocky Mountain Arsenal was the subject of the litigation. Colorado brought suit seeking to halt present violations and prevent future violations of the Colorado Hazardous Waste Management Act and regulations pursuant thereto. Plaintiff State asserted claims against the Army for (1) failure to close the pond in compliance with the closure plan ordered by the Colorado Department of Health; (2) failure to provide and monitor upgradient monitoring wells; (3) failure to submit a specific ground water monitoring program; (4) failure adequately to monitor and report ground water quality assessment; and (5) failure to pay annual operating and waste volume fees. One of the arguments asserted by the Army in their motion to dismiss was that the action was barred by sovereign immunity because the state regulatory standards sought to be applied were not precise or

37. *Silvex*, 606 F.Supp. at 163–64.
38. *Id.* and Goewey, *supra* note 5 at 529–30. *See also* Stever, *supra* note 1 at 10,116–117 questioning, even though the result in *Florida v. Silvex*, may be correct, whether the term "requirement" under RCRA must be of the same limited sort as previously held under the CAA and CWA.
39. Parola v. Weinberger, 848 F.2d 956 (9th Cir. 1988).
40. State of Colorado v. Army, Civ. No. 86–C–2524, slip op. (D. Colo. Feb. 24, 1989).

objective, and were illsuited for uniform application.[41] The court, after reviewing *Silvex* and *Kelley*, noted that the state regulations tracked almost verbatim with the federal regulations issued by EPA pursuant to RCRA.[42] Thus, the court concluded that the regulations set forth sufficiently specific and precise standards, subject to uniform applications to satisfy the term ''requirements'' as used in RCRA.[43]

IV. FINES AND PENALTIES

A. Case Law

A question of import that can and does arise is whether sovereign immunity has been waived under the federal facility provisions for fines and penalties.[44] Absent any further examination or analysis, a simple reading of the statutory language might lead some to conclude that federal facilities are subject to fines and penalties.[45] Court decisions have examined this question under the CWA, CAA, and RCRA. *California v. Walters*[46] was the first case and involved a determination of whether the Veterans Administration (VA) was subject to state criminal sanctions for improper disposal of hazardous waste in contravention of state law. California contended that criminal sanctions were ''requirements'' for which sovereign immunity had been waived by Congress in response to the *Hancock* decision. Furthermore, the state urged the court to find that Congress' use of the word ''all'' with respect to ''requirements'' evidenced their intent to waive immunity to criminal sanctions. Rejecting the state's arguments, the Ninth Circuit stated that criminal sanctions are not themselves ''requirements,'' but rather the means by which standards and other duties are enforced. Even though the term ''all'' was found to be clear and unambiguous enough to waive sovereign immunity with respect to permit requirements which were the issue in *Hancock*, the differences between the federal facility provision of the CAA prior to *Hancock* and the federal facility provision of RCRA were found not to show at all, much less clearly and unambiguously, an intent to subject the

41. *Id.* at 4 and 19. Because the Army was also cleaning up this pond and other parts of the arsenal under the authority of the Comprehensive Environmental Responsive Compensation and Liability Act (CERCLA), the Army also argued that CERCLA's enforcement and response provisions pre-empted and precluded state RCRA enforcement action with respect to cleanup of hazardous wastes at the arsenal. The court found that such state enforcement action was not barred based upon the court's reading of 42 U.S.C. § 6905 (a) and (b), 42 U.S.C. § 9614 (a) and 42 U.S.C. § 9620; and the fact that the site was not listed on the National Priorities List. *Id.* at 8–9, 14–15, and 16–19.

42. *Id.* at 19–21. *Silvex*, 606 F. Supp. 159 (M.D. Fla. 1983) and *Kelley*, 618 F. Supp. 1103 (W.D. Mich. 1983).

43. State of Colorado v. Army, Civ. No. 86–C–2524, slip op. (D. Colo. Feb. 24, 1989).

44. This section addresses the issue from the standpoint of the federal agency. Personal liability of federal employees for civil or criminal penalties is not addressed.

45. Breen, *supra* note 3 at 10,330 who concludes that ''even payment of fines imposed by state administrative agencies is required under [the CAA and CWA].'' An analogous situation illustrating that at times a simplistic reading of statutory provisions may not withstand a rigorous, probing analysis can be found in California v. Dep't of the Navy, 631 F. Supp. 584 (N.D. Cal. 1986). There, even though the statutory definition of ''person'' under the CWA includes states, the court held that a state was not a ''citizen'' within the meaning of section 505(a) of the CWA. Thus, a state could not bring suit against the Federal Government using the citizen suit provision of the CWA as the jurisdictional basis *Id.* at 586–90.

46. 751 F.2d 977 (9th Cir. 1984). Even though the administrator was named as a party defendant, the court noted that the parties had agreed that the case was, in essence, one against the United States. Note should be taken of the court's restriction that its holding would not necessarily apply in all cases to prosecutions against federal officers or federal agencies. *Id.* at 978, 979 and n.1 (stating that sovereign immunity does not *ipso facto* exempt federal agencies and officers from the operation of ordinary criminal laws). *See also* Goewey, *supra* note 5 at 529.

United States to criminal sanctions in addition to permit requirements. Indeed, the specific waiver for sanctions to enforce injunctive relief was found by the court only to make more conspicuous the lack of a waiver with respect to criminal penalties.[47] Without any elaboration, the legislative history of the federal facility provision of RCRA was stated not to show a clear intent to waive sovereign immunity to criminal sancitions.

In a subsequent case under RCRA involving the Coast Guard in North Carolina, the same conclusion was reached.[48] Once again the court started with the premise that waivers of sovereign immunity must be strictly interpreted. Contrary to the state's contention that the federal facility provision as a whole evidenced an intention that the Federal Government would be liable for payment of penalties, the section was found to contemplate only obligations arising from injunctions. Also it was noted that the House bill that specifically provided for payment of penalties was rejected by Congress in favor of the Senate bill that made no mention of waiving sovereign immunity for penalties.[49]

Three more cases have held that there is no waiver of sovereign immunity under the federal facility provison of RCRA for fines and penalties. Without determining if *Walters* and *Meyer* were applicable, the district court in *MESS* simply stated that the provision did not clearly and succinctly on its face provide a waiver for civil penalties.[50] When the State of Washington sought to assess an administrative penalty against the Department of Energy, the United States brought an action for declaratory relief.[51] Finding *Walters*, *MESS*, and *Meyer* persuasive, the judge held that sovereign immunity had not been waived under RCRA for administrative penalties.[52] Finally, a district court in California affirmed this precedent being unpersuaded by the logic of two intervening decisions to the contrary.[53]

This line of precedent regarding RCRA was broken by two decisions in 1988 from district courts in Ohio and Maine.[54] After setting forth the arguments of the respective parties and the applicable case law, the district court in Ohio concluded that the *Hancock* case controlled and declined to follow *Walters*.[55] *Hancock* was viewed as characterizing permits as an enforcement device and distinguishing between procedural and subtantive requirements. Congress' subsequent amendment of the federal facility provision to subject federal facilities to *all* substantive and procedural require-

47. *Id.* at 978.

48. Meyer v. United States Coast Guard, 644 F. Supp. 221 (E.D.N.C. 1986).

49. *Id.* at 223 citing 122 CONG. REC. 32,613 (1976).

50. McClellan Ecological Seepage Situation (MESS) v. Weinberger, 655 F. Supp. 601 (E.D. Cal. 1986). This case was a citizen suit brought pursuant to section 7002 of RCRA. Plaintiffs also alleged that the court could impose fines under this section as well as the federal facility provision. This contention was rejected by the court noting that penalties could only be imposed against "persons." Looking to the statute, the definition of "person" was found to "name everyone under the sun save for the United States of America." *Id.* at 603.

51. United States v. State of Wash., No. C–87–291–AAM (E.D. Wash. Jan. 22, 1988) (Memorandum Opinion), *aff'd* CIV. 87–4371 (9th Cir. Apr. 12, 1989).

52. The court used the reasoning of *Walters*, 751 F.2d 977 (9th Cir. 1984), to find that administrative penalties were not "procedural requirements" and that the explicit waiver for sanctions to enforce injunctive relief made it even clearer that Congress did not intend to waive immunity for state administrative penalties.

53. California v. Dep't of Defense, CIV. S–86–190 EJG (E.D. Cal. Apr. 18, 1988).

54. State of Maine v. Dep't of the Navy, CIV. 86–0211 P (D.Me. Nov. 23, 1988), 18 Envtl. L. Rep. (Envtl. L. Inst.) 20,364 (adopting the magistrate's proposed decision based on different rationale); State of Ohio v. United States Dep't of Energy, 689 F. Supp. 760 (S.D. Ohio 1988).

55. *Ohio*, *id. Hancock*, 426 U.S. 167 (1976); and *Walters* 751 F.2d 977 (9th Cir. 1984). The *Ohio* court adopted the analysis of Magistrate Hornby in his recommended decision in *Maine v. Navy*, stating that the magistrate's analysis of *Hancock* and *Walters* was correct.

ments was considered determinative and manifested a complete waiver. This was especially true since the amendment was subsequent to the Supreme Court decision in *Hancock* that held that the absence of such specific, inclusion language limited the waiver of sovereign immunity to only substantive requirements. If this were not the intent of Congress, the court hypothesized that Congress could have merely added parenthetical language subjecting federal facilities to permit requirements. However, the *Ohio* court believed Congress instead chose to clarify the term requirements by use of the word "all" and added parenthetical language to delineate some of the requirements that were included but which were not an exhaustive list of matters for which sovereign immunity was waived. Therefore, the *Ohio* court rejected the analysis in *Walters* that criminal sanctions were not requirements but rather the means by which requirements are enforced.[56]

Reaching the same conclusion as the Ohio District Court that the wording of the federal facility provision of RCRA was clear enough by fair construction to include a waiver for civil penalties, the district court in Maine expanded on the rationale.[57] First, rather than examining *Hancock*'s reasoning, the dictionary definitions of several words were examined. A requirement was found to be something called for or demanded (i.e. a requisite). A requisite was defined as that which was required by the nature of things or circumstances. The verb form "to require" was defined to impose a compulsion or command upon someone to do something. Then with respect to the state civil penalty statute, the court concluded that the penalties were "obviously a form of enforcement requirement intended 'to impose a compulsion or command upon [someone] to do something' as the circumstances may require."[58] Also the court concluded that penalties were clearly "called for" to enforce the environmental laws and that they might be "required . . . by the circumstances."

Furthermore, the judge in *Maine v. Navy* found nothing in the historical or precedential considerations that would cast any doubt upon his conclusion that the language used by Congress encompassed civil penalties. In his view, *Hancock* specifically differentiated substantive from procedural or enforcement requirements. He concluded that Congress' purpose in passing the federal facility provision of RCRA shortly thereafter was to obviate the effect of the distinction highlighted in *Hancock*.[59] Also significant was the wording found in the CAA, CWA, and SDWA that absolves federal employees from liability for civil penalties in the performance of their official duties.[60] This was interpreted to be necessary only if civil penalties were included in the realm of "requirements" for which sovereign immunity had been waived. With respect to the federal facility provision of the CWA that states the United States will only be liable for civil penalties arising under federal law, the judge disagreed with Magistrate Hornby's reasoning and concluded that such provision did not mean that penalties were not part of "requirements" but rather merely a limitation on the penalties that were previously included under the generic terms of "requirements."[61] This rationale was reinforced by Congress' use of the word "only" with respect to the penalties.

This split of judicial opinion as to the scope of the waiver of sovereign immunity has also occurred in the analysis of the federal facility provision of the CWA. Part of

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56. *Ohio*, 689 F. Supp. at 765.
57. Maine v. Navy, CIV. 86-0211 P(D. Me. Nov. 23, 1988).
58. *Id.* at .
59. *Id.* at 11.
60. *Id.* at 13.
61. *Id.* at 14–15.

the claims in *MESS* involved the CWA.[62] Specifically at issue was the proper interpretation of the phrase within the federal facility provisions that reads "the United States shall be liable only for those civil penalties arising under Federal law or imposed by a State or local court to enforce an order or the process of such court."[63] Reading the "or" between "law" and "imposed" in either the conjunctive or disjunctive manner resulted in such paradox, that the judge concluded the sentence was "a compilation of ambiguity."[64] Using the word in a disjunctive fashion would result in a federal facility being liable for fines that arose under the provisions of federal law even if enforced in a state or local court. However, the same facility would not be subject to fines under state law regarding the same subject matter even if the state law were exactly the same as the federal law. Using the term in a conjunctive fashion would mean that federal facilities would be liable for civil penalties arising under federal law "and" those civil penalties imposed by a state or local court. However, this interpretation was not seen to make any sense because the remaining "such court" phrasing appeared to be out of context.[65]

An opposite conclusion was reached with respect to the federal facility provision of the CWA by the court in *Ohio v. Dep't of Energy*.[66] However, there the question was framed as whether penalties imposed for violation of the state-administered National Pollutant Discharge Elimination System (NPDES) program arose under federal law. The court recognized that once a state NPDES program was approved by the federal EPA, the federal permit program was withdrawn and the state program was administered in accordance with federal guidelines. Defendants asserted that since federal approval of the state program did not convert the penalty provisions of state law into federal law and the program was operated under state rather than federal law there was no waiver of sovereign immunity for fines or penalties under the CWA. In rejecting the defendants' argument, the court stated that liability was imposed on the United States for penalties *arising* under federal law. Therefore, under the circumstances, the court concluded that sovereign immunity had been waived by Congress.[67]

California sought penalties from the Navy for violation of its state issued NPDES permit.[68] Their position was that under the federal facility provision of the CWA the Navy was required to comply with state NPDES permit requirements. California advocated two arguments based upon the relationship of the federal facility provision with other provisions of the CWA. First, under section 309(d) of the CWA, any person who violates a state issued permit is subject to a specified penalty. Thus, one of California's arguments was that these two sections combined gave them authority to seek civil penalties against federal violators. Second, under section 402(b)(7), a state was required to have adequate authority to abate violations of the state program including penalties. They argued that because these provisions were mandated by the federal law and approved by the federal EPA, the penalty provisions thus "arose" under federal law and as such sovereign immunity had been waived for their imposition.

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62. *MESS* 655 F. Supp. 601 at 604 (E.D. Cal. 1986).
63. 33 U.S.C. § 1323.
64. 655 F. Supp. 601 at 604 (E.D. Cal. 1986.)
65. *Id.* The court also concluded that federal facilities were not liable for civil penalties under the citizen suit provision of the CWA because fines could be imposed against "person[s]" and the United States is not defined as a person under the Act. *Id.* at 605.
66. Ohio v. Dep't of Energy, 689 F. Supp. 760 at 766–67.
67. *Id.* at 767.
68. California v. Navy, 631 F. Supp. 584 (N.D. Cal. 1986).

The Ninth Circuit quickly disposed of both arguments.[69] Looking at the structure of section 309 and its legislative history, they concurred with the district court's conclusion that only the Administrator of EPA could impose such penalties. With respect to state approved programs under section 402, the circuit court noted that the federal law required states to submit to the federal EPA a description of the program it intended to administer under "state" law. They also pointed out that the referenced state law penalty provisions authorized the State Attorney General to seek civil penalties in "state" superior court. Finally, they found that the legislative history clearly stated that state programs were "not a delegation of Federal authority," but are programs which "function[] in lieu of the Federal program." Therefore, California's second argument was also rejected and no waiver was found.

Both cases that have considered the question of liability of federal facilities for penalties under the CAA have found that sovereign immunity has been waived. In the first case, suit was brought by the state of Alabama for violation of hazardous air pollutant regulations regarding the removal of asbestos by the VA.[70] In finding the federal agency subject to state sanctions for violations of state regulations, the court cited only the House report.[71] Likewise, in the case of *Ohio v. United States Air Force*,[72] the court relied on its interpretation of the legislative histories of the major environmental statutes. In the same manner as the Alabama court in *Graddick*, this court relied heavily on the House report for the CAA. Also important to the decision was the lack of specific language to limit sanctions as is found in the RCRA and the CWA.

B. Legislative History and Analysis

In 1976 RCRA was the first statute to be considered in the wake of *Hancock* by the 94th Congress.[73] The House report indicated that the House bill would retain the full scope of sovereign immunity as set out in *EPA v. State Water Resources Control Board*,[74] and *Hancock*, and to create a federal unit to address federal environmental compliance nationally. However, as noted by the court in *Meyer v. United States Coast Guard*,[75] Congress rejected a House bill that specifically authorized the granting of civil penalties and instead chose to adopt the Senate bill that made no mention of waiving sovereign immunity for civil penalties. RCRA states expressly that the sanctions it authorizes are only in aid of injunctive relief: "injunctive relief and such sanctions as may be imposed by a court to enforce such relief. . . ."

The legislative history of RCRA also manifests that Congress distinguished between substantive and procedural requirements and enforcement mechanisms such as fines

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69. California v. Navy, 845 F.2d 222 (9th Cir. 1988).

70. State of Ala. ex rel. Graddick v. Veterans Admin., 648 F. Supp. 1208 (M.D. Ala. 1986).

71. *Id.* at 1211, 1212. An analysis of the legislative histories of the CWA, RCRA, CAA, and SDWA is set forth *infra* section IV.B. of text. Of interest is the fact that the House report favorably reference the case of *Alabama v. Seeber*, 502 F.2d 1238 (5th Cir. 1974), which was decided before *Hancock*, 426 U.S. 167 (1976), and held that sovereign immunity had been waived under the CAA for state permit requirements.

72. Ohio ex rel. Celebrezze v. United States Dep't of Air Force, _____ F. Supp. _____, C–2–86–0175 (E.D.S.D. Ohio, Mar. 9, 1987), (unpublished).

73. For a general discussion of the legislative history of RCRA, CAA, and CWA, *see* Goewey, *supra* note 5 at 531–40. 74426 U.S. 200 (1976).

74. 426 U.S. 200 (1976).

75. Citing 122 CONG. REC. 32,613 (Sept. 27, 1976).

and penalties.[76] Such distinction can be seen in the House report on H.R. 14496, which would have specifically subjected federal facilities to civil penalties. This report stated:

> First there are clear standards, both substantive and procedural, for federal agencies to follow.
> Second, there is a clear method of enforcement of such standards by the Environmental Protection Agency and through citizen suits against the federal facility or EPA if such standards are not followed.
> Third, state officials would be relieved of the almost impossible burden of enforcing federal environmental laws against federal polluters.[77]

In addition, the enforcement section of RCRA, 42 U.S.C. 6928, authorizes EPA to impose civil penalties against any "person" (which by definition does not include federal facilities) for violations of RCRA's "requirements." Although this section has been amended three times, Congress has maintained the distinction between "requirements" and civil penalties.[78]

Next, the SDWA was considered by the 95th Congress. The Senate bill was passed in lieu of the House bill after amending its language to contain much of the text of the House bill. The House report, section 8, states that this section subjects federal agencies to "process and sanctions." Later in the same paragraph, the report states the section waives the immunity of the federal agencies and subjects them to "Federal, State, and local judicial process" and that any state or local government could seek a judicial remedy against a federal agency in state or local court or seek an administrative remedy. No mention is made of civil penalties. Even though the language is different, this wording carries forth the intent expressly stated in RCRA that the only sanctions allowed are those necessary to enforce injunctive relief (i.e. contempt). Process and sanctions are not set apart but rather are set forth as related concepts. The "process" referred to in the language of the bill is explained in the report to be judicial process. Thus, the linking of the term "sanctions" with process can only be interpreted unambiguously if it refers to sanctions to enforce the judicial process. The wording of the enacted provision states the federal agencies shall be subject to "process and sanctions." In the second sentence, which delineates to what the preceding sentence applies, part (C) states "to any process or sanction, whether enforced in Federal, State, or local courts." Therefore, it can be seen that the concept of process and sanctions is an interrelated term of art limited to the judicial process.

Turning to the CAA, the 95th Congress again considered amendment of the federal facility provision. Here the House bill proposed to subject facility provision. Here the House bill proposed to subject federal facilities to all fines and penalties including sanctions for contempt. However, in the House bill, the concept of process was separated from sanctions. The House report states the committee's intent was to subject federal facilities to all federal, state, and local requirements (both substantive and procedural), and "process, and sanctions."[79] Enforcement was authorized by

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76. Memorandum of the United States in support of its motion to dismiss plaintiff's complaint for lack of subject matter jurisdiction in the case of Mitzelfelt v. Dep't of Air Force, Civ. No. 88–1535M (D.N.M.) (filed Nov. 28, 1988).

77. *Id.* at 28-29 citing H.R. REP. NO. 1491, 94th Cong., 2d Sess. 49, *reprinted in* 1976 U.S. CODE CONG. & ADMIN. NEWS 6238, 6287.

78. *Id.* at 28.

79. H.R. REP. NO. 294, 95th Cong., 1st Sess. 199, *reprinted in* 1977 U.S. CODE CONG. & ADMIN. NEWS 1278.

the same means, process, sanctions, and jurisdiction as for any non-Federal source.[80] Note must be taken of the fact that there is always a comma between the terms process and sanctions. This is not just a grammatical problem of no distinction. The House knew how to separate different unrelated terms in a series. For example, in the modifiers to requirements, there is a comma between state and local In the conference report, the Senate amendment is summarized as subjecting federal facilities to certain requirements including "injunctive relief and sanction provisions."[81] This is a correct summarization of the Senate report that stated, "This includes . . . such sanctions imposed by a court to enforce such relief . . . ."[82] Such provisions are certainly not surprising and are consistent with the previous provisions in RCRA and SDWA.

The conference report states that the Senate concurred "in the House provision *with the amendments*."[83] Further, it states the intent of the conferees was to require compliance with all procedural and substantive requirements, to authorize suit of federal facilities by states in state courts, and to subject such facilities to state sanctions. Thus, it would appear that the all encompassing fine provisions of the original House bill did not survive markup by the conference committee. Only the House provisions *as amended* were adopted. This is certainly something less than the full House bill. Also, the conference report spells out that the intent of the conferees was to effect three things: compliance with requirements, allow states to sue federal facilities, and to subject "such facilities" to state sanctions. There may be a question as to what is meant by the term "such facilities." A reasonable interpretation is that facilities that do not comply and are sued to effect compliance shall also be subject to sanctions. This would be in line with the Senate view that noncomplying facilities should be subject to injunctive relief and sanctions to enforce such relief.[84] Another interpretation could be that "such" is synonymous with "federal." Under this interpretation, the phrase would read: "and to subject federal facilities to State sanctions." However, this is not likely because the word "such" obviously refers to some preceding concept in the sentence. The topic of the sentence is the intent of the conferees. Only in the preceding clause is reference made to the term "facilities," and this is in the context of facilities that are sued by states in state courts.[85]

As enacted, the CAA subjects federal facilities to, and requires compliance with, "all . . . requirements, administrative authority, and *process and sanctions* respecting. . . ."[86] Requirements include substantive and procedural; administrative authority

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80. *Id.* at 1279.

81. H. CONF. REPORT NO. 564, 95th Cong., 1st Sess. 137, *reprinted in* 1977 U.S. CODE CONG. & ADMIN. NEWS 1517.

82. S. REP. No. 127, 95th Cong. 1st Sess. 58 (1977).

83. H. CONF. REP. NO. 564, 95th Cong., 1st Sess. 137, *reprinted in* 1977 U.S. CODE CONG. & ADMIN. NEWS 1518 (emphasis added).

84. Such an interpretation also parallels the wording of the CWA, which states, "[T]he United States shall be liable only for those civil penalties arising under Federal law or imposed by a State or local court to enforce an order or the process of such court." As discussed later, the conference report on the CWA states that the Act was amended to bring its provisions in line with the CAA.

85. The accuracy of the conference report should perhaps be questioned. In summarizing the provisions of the House bill, the conference report states that any federal employee may be held liable for civil penalties as well as in his official capacity for a violation of the provision. The House report on the bill, though, states, "[T]he amendment indicates that any officer, employee, or agent of the U.S. Government may *not* be held liable personally." 1977 U.S. CODE CONG. & ADMIN. NEWS 1279 (emphasis added).

86. 42 U.S.C. § 7418 (emphasis added).

encompasses federal, state, and local authority; and process and sanctions apply whether enforced in federal, state, or local courts. From this, the inescapable conclusion is that process and sanctions are one interrelated concept. They are neither separate terms divorced from each other nor correctly interpreted by giving each their respective definition from *Black's Law Dictionary*. First there is a comma after "administrative authority" and there is an "and" before the terms "process and sanctions." Second, there is no comma separating "process" from sanctions as there was in the House report on the original House bill. If the phrase had been worded to read "administrative authority, process, and sanctions;" then it would have been clear that "sanctions" was an entity distinct from "process." This concept is further reinforced in the second sentence when it talks about such "process and sanctions" being enforced in the courts. Such an interpretation correlates with the wording in the conference report as previously discussed. Therefore, the amendments to the House bill effected the Senate concept of sanctions to enforce injunctive relief, thereby bringing the provision in line with the previously passed RCRA and SDWA.

Finally, the 95th Congress considered the CWA. The House bill did not contain any amendments to the federal facilities provision. Under the Senate bill, federal facilities would have been subject to federal, state, and local provisions for injunctive relief and "such sanctions imposed by a court to enforce such relief."[87] There is no further elaboration of the final statutory language. The conference report merely states that the "conference substitute [was] essentially the same as the Senate admendment revised to conform with a comparable provision in the Clean Air Act."[88] No reference was ever made to any civil penalties other than those with respect to enforcement of court injunctive relief. The final statutory language is very similar to the wording of the CAA. First, there is a sentence that subjects federal facilities to, and requires compliance with, requirements, administrative authority, and process and sanctions. Then, there is a sentence that explains each of these three concepts. With respect to "process and sanctions," it explains that the terms apply to any "process and sanction, whether enforced in Federal, State, or local courts . . . ." This wording exactly parallels the CAA; thus indicating that these terms are one interrelated concept that is further explained to be in aid of relief against noncomplying facilities in the judicial court system. Unlike the CAA, the federal facility provision of the CWA contains an additional explanatory sentence that states that "the United States shall be liable only for those civil penalties arising under Federal law or imposed by a State or local court to enforce an order or the process of such court." Two aspects of this sentence should be noted. First this phrase absolutely limits liability for civil penalties because it contains the word "only." Second, by using the disjunctive "or" between "law" and "imposed", Congress limited civil penalties under state or local law to those necessary to enforce an order of the court. By such language, Congress carefully carried through the concept of process and sanctions envisioned by the Senate starting with the passage of RCRA; that is, that federal facilities would only be subject to sanctions to enforce injunctive relief. Although this explanatory phrasing is not found in the CAA, the same Congress that passed both acts explained that the amendments to the federal facility provision of the CWA were done with a view to conform it to the

87. S. REP. NO. 370, 95th Cong., 1st Sess. 67, *reprinted in* 1977 U.S. CODE CONG. & ADMIN. NEWS 4392.

88. H.R. REP. NO. 830, 95th Cong., 1st Sess. 93, *reprinted in* 1977 U.S. CODE CONG. & ADMIN. NEWS 4468.

similar provision of the CAA. Thus, it can reasonably be inferred that the intent of the 95th Congress was to effect the same requirements under both acts as more fully explained under the CWA.

Even though the wording may be somewhat different, the federal facility provisions of the four acts are indeed very similar and the purpose was in all probability the same. The structure and wording of the SDWA, CAA, and CWA are almost identical. Arguments on fines and penalties are set forth above. Another example of same purpose despite different wording can be found in the consideration of removal of actions brought in state court to federal court. The conference report on the CAA states that the Senate concurred in the House bill with an amendment to delete a provision which barred removal of suits against Federal facilities to federal courts. Thus, Congress acted to preserve removal, but did not include any affirmative language in the text of the federal facility provision. In the CWA, which the conference report says was modified to conform to the CAA, specific language is found that allows removal of suits brought pursuant to the section to the appropriate federal district court in accordance with 28 U.S.C., section 1441. One could assert that Congress meant to prohibit removal of actions under RCRA, SDWA, and CAA because there is no specific language in the acts themselves like that of the CWA. However, this would clearly be unreasonable in light of the acts and their legislative histories. The wording of the CWA is more specific and serves to clarify the intent of Congress not only with respect to removal, but also fines and penalties.

C. Policy Considerations

There are policy reasons to support a determination by Congress that federal facilities should not be subject to state fines and penalties, and that the Federal Government may not be the same as a private person when considering such fines and penalties. A very broad waiver for fines and penalties would allow states to engage in a new, unique form of revenue sharing. States could divert to themselves funds appropriated by Congress for other designated purposes thereby allowing state interests to override federal interests.[89] Agencies almost always receive less in congressional appropriations than they ask for in their budgetary requests. Thus, allowing diversion of these funds by states for fines and penalties results in punishing the public at large by unexpectedly decreasing the already less than optimum dollars available to meet the public duty of the agency. In addition to inadequate funding, federal agencies must also comply with the federal statutory budgetary and procurement process that can be lengthy in addition to uncertain. Therefore, obtaining funds to initiate as well as to maintain environmental projects can be untimely and uncertain.[90] Federal agencies are prohibited by law from obligating the Government to spend monies for which there has not been an appropriation.[91]

Recently a state brought suit against the Air Force based upon alleged violation of particulate emission standards and operating without a permit at a government owned, contractor operated (GOCO) facility and an Air National Guard Base. An $8 million state-of-the-art flue gas filtration project was put in as quickly as possible under federal procurement regulations at the GOCO facility, which reduced emissions to one third of the allowable rate. The state still sought over $1 million

89. Goewey, *supra* note 5 at 523, 541–42.
90. *Id.* at 545–46 and Stever, *supra* note 1 at 10,114 and 10,115–116.
91. 31 U.S.C. § 655.

in penalties. In response to interrogatories, the state asserted that there was no predetermined penalty policy. Likewise, when asked what other comparable facilities had been prosecuted by the state and what fines had been levied, the state refused to answer, claiming prosecutorial discretion. This approach raises the specter that federal facilities may be subjected to prosecutorial discrimination by the states in the enforcement of environmental laws. This mirrors the problem of selective application of state standards to federal cleanups of past waste disposal sites, both on and off federal installations, addressed in sections 120(a)(4), 121(d)(2)(C)(ii) and (iii), and 121(d)(4)(E) of Superfund Amendments and Reauthorization Act (SARA). To allow states to assess fines under the federal facility provisions as they now exist could open the public fisc to the unbridled discretion of the states.

Congress may also have considered that governmental operations have unique aspects for which there is no correlation in the private sector and which militate against fines and penalties. Federal facilities provide specialized service to the public. In so doing, such facilities must operate within the bounds specified by law. In seeking to correct any existing or potential environmental problems, the statutory appropriation process must be followed and, because of the number of requirements and the level of funding by Congress, priorities must be set by the agencies. Government agencies cannot voluntarily cease operations for any noncompliance problem without affecting the public welfare. Ceasing operations at our contractor's plant would have stopped production of the B–1B; likewise, if the central heating plant closed at the base involved in the suit, strategic refueling capability would have been lacking. Unlike the private sector where there is competition in the provision of goods and services, if a government entity ceases operations, there is no other competitor to provide the services. Fines against the private sector ensure that problems will be corrected by hitting the violator where it hurts most: in the profit margin. Under our fiscal system, profit return to shareholders is the prime measure of corporate management's effectiveness and performance, and hence integral to maintaining their employment. As enunciated in the EPA's guidance on fines and penalties, any economic benefit gained by noncompliance is removed by an adequate fine; indeed this is the major objective of the fine. However, this reasoning does not similarly apply to government agencies. They do not operate for a profit and hence there is no economic benefit for noncompliance; to fine an agency is to punish the public for the discretionary actions of their public servants and/or for the mandates of their appropriation process. Further, while economics is an important factor, most federal employees' performance is not measured in terms of profit, but in terms of a larger concept of effective performance of mission. So too in DOD, with frequent movement of military personnel, it is rare that the person causing a problem is still there to suffer the consequences of managing, notwithstanding the penalty.

At the Air Force plant and base that were sued, the state never issued a notice of violation, a cease and desist order, nor any other administrative action. Both facilities entered into compliance agreements with federal EPA and met the terms of those agreements. The state concurred in the time schedule of the agreements but refused to be a signatory to them. The facilities refused to sign agreements with the state, which were identical to the federal EPA's, because such agreements demanded a payment of fines by the facilities. Each facility has now demonstrated compliance and the state has agreed to issue permits. The sole issue in this case is the assessment of penalties retroactively over a period of many years.

It is extremely doubtful that Congress expected federal facilities to be fined by states that do not have a fine or penalty policy and carry out their enforcement

actions in a manner that smacks of discrimination against the Federal Government.[92] Equally unlikely is the prospect that Congress intended federal facilities to be fined for carrying out their missions while expeditiously pursuing funding and installing corrective measures in accordance with an EPA compliance agreement. What is reasonable is that Congress intended that the reasonableness of agency compliance actions should be subjected to judicial review through injunctive suits for compliance, and if the agencies failed to comply with the court's orders, they would be subject to sanctions (i.e. "process and sanctions"). To the extent that the phrasing used by Congress does not address whether fines and penalties should be assessed in the situations detailed above it is unclear and ambiguous, thereby negating a finding of waiver.

The Supreme Court has recognized these problems when addressing waivers of sovereign immunity. Under the Federal Tort Claims Act,[93] the Government is liable "in the same manner, and to the same extent as any nongovernmental entity." In *Feres v. United States*, the Court stated:

> It will be seen that this is not the creation of new causes of action but acceptance of liability under circumstances that would bring private liability into existence . . . . One obvious shortcoming in these claims is that plaintiffs can point to no liability of a "private individual" even remotely analogous to that which they are asserting against the United States.[94]

The Government cannot be sued over the functioning of the Government processes.[95] Recently the waiver has been construed as not authorizing actions against the United States based upon alleged faults in the administrative or legislative process, both because the waiver of sovereign immunity was never meant to be so large, and also because there is no private analog to the alleged federal wrongs.[96]

V. CONCLUSION

When called upon to examine waivers of sovereign immunity, the Supreme Court has been very consistent and very clear that such provisions are strictly and narrowly interpreted. In defining the breadth of the term "requirements," as used in the federal facility provisions of the major environmental statutes, the courts have followed the Supreme Court's rules of interpretation as well as the reasoning set forth in *Hancock* and *EPA v. California*.[97] This has led to the development of the rule that the term "requirements" encompasses only those state or local laws that contain objective, ascertainable, administratively predetermined standards. Vague and general nuisance type prohibitions, including reporting requirements based upon such nebulous substantive provisions, will not pass muster.

Some courts have not been as restrictive or consistent with respect to determining if sovereign immunity has been waived for fines and penalties. Those courts that have followed the rules of strict and narrow interpretation of waivers of sovereign immunity have found that the United States is not subject to state or local fines and

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92. Breen, *supra* note 3 at 10,330 and n.70 citing unpub. Comp. Gen. Dec. B–191747 (June 6, 1978).
93. 28 U.S.C. § 2674.
94. 340 U.S. 135, 141 (1950).
95. *Id.* at 142–43.
96. C.P. Chemical Co., Inc. v. United States, 810 F.2d 34, 36–39 (2d Cir. 1987).
97. *Hancock*, 426 U.S. 167 (1976) and EPA v. California, 426 U.S. 200 (1976).

penalties. Even though the wording is different under each of the major environmental statutes examined in this article, it is questionable whether a different conclusion should be reached as to the scope of the waiver of sovereign immunity under the respective federal facility provision of each. All four provisions were enacted in response to the decisions in *Hancock* and *EPA v. California*.[98] These acts are obviously similar and have similar purposes. Accordingly, they should be interpreted in a consistent manner. As noted by some courts, their legislative histories should be mutually examined and used as cross-references.[99]

When addressing the federal facility provision of RCRA, a basic premise of the district court in *Ohio v. Dep't of Energy*, was that the court in *Hancock* distinguished between procedural and substantive requirements, and that permits were characterized as an enforcement device that was procedural in nature.[100] This is incorrect. The Supreme Court noted that the Court of Appeals had concluded that federal installations were obligated to comply with state substantive requirements, as opposed to state procedural requirements, but that the plaintiff-state had rejected the distinction. Given that the federal facility provision of the CAA made it the duty of federal facilities to comply with state emission standards, the Supreme Court stated that the "heart of the argument . . . is that Congress necessarily implied the power to enforce from the conceded authority to develop and set emission standards."[101] Quoting from the Fifth Circuit case of *Alabama v. Seeber*, they clearly stated that the question was whether Congress had impliedly waived immunity for state enforcement mechanisms, rather than whether Congress had made a distinction between substantive and procedural requirements and only waived sovereign immunity as to substantive requirements.[102] The Ohio court's reliance on the word "including" in the parenthetical list to infer that the term procedural requirement meant all state provisions for fines and penalties, violates the rule of interpretation that a waiver of sovereign immunity must be express and cannot be implied. This is particularly true in light of the fact that the House bill that would have provided for fines and penalties was rejected in favor of the Senate bill that did not.[103] This portion of the legislative history was not mentioned by the Ohio court.

In exactly the same manner as the Ohio court, the district court in *Maine v. Navy* misstated the issue and holding in *Hancock* when it construed the scope of the waiver in RCRA.[104] Nor did the Maine court discuss the rejection of the House bill in favor of the Senate bill. In two instances this court also violated the rule that waiver must be express and cannot be implied. First, the court held that the wording of the CAA, CWA, and SDWA that limited the civil liability of federal employees implied that Congress intended the agencies themselves to be subject to civil penalties.

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98. *Id.*

99. Ruckelshaus v. Sierra Club, 463 U.S. 680 (1983); Middlesex County Sewerage Authority v. Sea Clammers, 453 U.S. 1, 17 n.27 (1981); United States v. Commonwealth of Puerto Rico, 721 F.2d 832, 836–38 (1st CCA 1983); Lubrizol v. Train, 547 F.2d 310, 318 (6th CCA 1976). *See also* Northcross v. Memphis Board of Education, 412 U.S. 427, 428 (1973).

100. Ohio v. Dep't of Energy, 689 F. Supp. 760 at 762.

101. *Hancock*, 426 U.S. 167 at 183. As stated in a recent brief submitted by the Department of Justice, the Supreme Court's reference to enforcement mechanisms in *Hancock* was in the sense of the "means of implementing environmental standards" as set forth in the *Parola* case. *Parola* distinguished procedural means to implement substantive standards from "enforcement mechanisms," and stated "Congress . . . knows how to select language to waive sovereign immunity to criminal penalties and civil damages, if it so intends." Memorandum, *supra* note 76 at 19–20, citing Parola v. Weinberger, 848 F.2d 956, 962 and n.3 (9th Cir. 1988).

102. *Id.*

103. Section 601 (a)(1) of H.R. 14496. *See also Meyer*, 644 F. Supp. 221 at 223.

104. Maine v. Navy, Civ. No. 86-0211 at 11.

Second, the court held that the limitation under the CWA that limited the liability of the United States to penalties arising under federal law implied that penalties were included within the term "requirements." In both *Hancock* and *EPA v. California*, the Supreme Court went to great lengths to devise alternate explanations to defeat every argument of the plaintiffs that Congress had waived sovereign immunity by implication. Perhaps the best example that a waiver of sovereign immunity must clearly be express is *Library of Congress v. Shaw*.[105] Contrary to the holding of the Maine court, Congress' inclusion of the limiting language in the CAA, CWA, and SDWA could merely have been included to remove any doubt that the United States, with respect to the CWA, or federal employees, with respect to the other acts, were subject to any liability.

Both cases that find federal agencies subject to fines and penalties under the CAA incorrectly rely upon the legislative history of the act.[106] Each case relied heavily on the House report that would have subjected agencies as well as employees to fines and penalties. No mention was made of the facts that (1) there was a great disparity between the House bill and the Senate bill that would only have permitted sanctions to enforce injunctive relief, (2) the conference report states that the House bill was adopted with amendments, and (3) there is no mention in the conference report of any compromise regarding extending fines and penalties to federal agencies. This last point may be of particular importance given the discussion in *Hancock*. There in addressing an argument by the plaintiff-state that Congress by adopting the Senate term "requirements" meant to subject federal facilities to enforcement measures not embraced in the language of the House bill, the Supreme Court stated that it was "remarkable that [the conference report] made no reference to its having reconciled this difference in favor of extending state regulation over federal installations."[107] The Ohio district court also incorrectly relied upon the lack of what it viewed as wording to limit the term "sanctions" under the CAA and SDWA, which was included in the CWA and RCRA, to imply that Congress had waived sovereign immunity.[108]

Congress is aware of the requirement of clear language to bind the United States.[109] Congress can always amend the statutes to provide clearly for fines and penalties if that is indeed their desire. Congress did amend the RCRA in 1984 but did not clarify any of the language in the facility provision. Indeed they passed another federal facility provision with respect to the new section regulating underground storage tanks that is almost identical to the previous one under RCRA.[110] Recently Congress passed a very expansive federal facility provision under the Medical Waste Tracking Act of 1988.[111] This provision is included in the appendix. The structure of the provision is very similar to the federal facility provision of RCRA because initially the provision was part of H.R. 3785. This was introduced in the 100th Congress to amend the Solid Waste Disposal Act to clarify the application of certain require-

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105. Library of Congress v. Shaw, 478 U.S. 310 (1986).

106. *Alabama*, 648 F. Supp. 1208; and Ohio ex rel. Celebrezze v. United States Dep't of Air Force, C–2–86–0175 (E.D.S.D. Ohio, Mar. 9, 1987) (unpublished).

107. *Hancock*, 426 U.S. 167 at 188–89.

108. *Ohio*, C–2–86–0175 (E.D. Ohio, Mar. 9, 1987) (unpublished).

109. *Hancock*, 426 U.S. 167 at 198.

110. 42 U.S.C. § 6991f. Although the wording of this section is close to that of 42 U.S.C. § 6961, it does not include the clarifying parenthetical language of § 6961. Thus, it might be argued that Congress did not waive sovereign immunity even for sanctions to enforce injunctive relief.

111. Pub. L. No. 100–582, 102 Stat. 2950. Section 2(a) of the Medical Waste Tracking Act of 1988 added a new section 11,006 to the SDWA that dealt with federal facilities.

ments and sanctions to federal facilities.[112] Certainly the specificity of this provision demonstrates that Congress knows how to word a provision so as to subject federal facilities to fines and penalties. In contrast the current federal facility provisions of the CAA, CWA, SDWA, and RCRA are devoid of the degree of clarity evidenced in the Medical Waste Tracking Act. If indeed it is Congress' intention, the other environmental statutes can be amended to conform to the Medical Waste Tracking Act.

Because of the decisions under the CAA, CWA, and RCRA that hold federal facilities are subject to fines and penalties, the issue is certain to be appealed to the Supreme Court by the losing party. Based on the above arguments, it is doubtful that the appellate courts will find that there is the requisite clear and unambiguous waiver of sovereign immunity. Until the final chapter is written, the current policy is that federal facilities are not subject to such fines and penalties under the federal facility provisions of the CAA, CWA, SDWA, and RCRA.

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112. The bill was reported out of the House Energy & Commerce Committee but was not acted on by the House after sequential referral to the House Armed Services Committee.

APPENDIX

SAFE DRINKING WATER ACT

42 USC Sec. 300j–6. Federal agencies

COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS, ETC.; SCOPE OF APPLICABILITY OF COMPLIANCE REQUIREMENTS, ETC.: LIABILITY FOR CIVIL PENALTIES

(a) Each Federal agency (1) having jurisdiction over any federally owned or maintained public water system or (2) engaged in any activity resulting, or which may result in, underground injection which endangers drinking water (within the meaning of section 300h(d)(2) of this title) shall be subject to, and comply with, all Federal, State, and local requirements, administrative authorities, and process and sanctions respecting the provision of safe drinking water and respecting any underground injection program in the same manner, and to the same extent, as any nongovernmental entity. The preceding sentence shall apply (A) to any requirement whether substantive or procedural (including any recordkeeping or reporting requirement, any requirement respecting permits, and any other requirement whatsoever), (B) to the exercise of any Federal, State, or local administrative authority, and (C) to any process or sanction, whether enforced in Federal, State, or local courts or in any other manner. This subsection shall apply, notwithstanding any immunity of such agencies, under any law or rule of law. No officer, agent, or employee of the United States shall be personally liable for any civil penalty under this subchapter with respect to any act or omission within the scope of his official duties.

CLEAN WATER ACT

33 USC Sec. 1323. Federal facilities pollution control

(a) Each department, agency, or instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any property or facility, or (2) engaged in any activity resulting, or which may result, in the discharge or runoff of pollutants, and each officer, agent, or employee thereof in the performance of his official duties, shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution in the same manner, and to the same extent as any nongovernmental entity including the payment of reasonable service charges. The preceding sentence shall apply (A) to any requirement whether substantive or procedural (including any recordkeeping or reporting requirement, whatsoever), (B) to the exercise of any Federal, State, or local administrative authority, and (C) to any process and sanction, whether enforced in Federal, State, or local courts or in any other manner. This subsection shall apply notwithstanding any immunity of such agencies, officers, agents, or employees under any law or rule of law. Nothing in this section shall be construed to prevent any department, agency, or instrumentality of the Federal Government, or any officer, agent, or employee thereof in the performance of his official duties, from removing to the appropriate Federal district court any proceeding to which the department, agency, or instrumentality or officer, agent, or employee thereof is subject pursuant to this section, and any such proceeding may he removed in accordance with section 1441 et seq. of Title 28. No officer, agent, or employee of the United States shall be personally liable for any civil penalty arising from the performance of his official duties, for which he is not otherwise liable, and the United States shall be liable only for those civil penalties arising under Federal law or imposed by a State or local court to enforce an order or the process of such court . . . .

RESOURCE CONSERVATION AND RECOVERY ACT

42 USC Sec. 6961. Application of Federal, State, and local law to Federal facilities

Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any solid waste management facility or disposal

site, or (2) engaged in any activity resulting, or which may result, in the disposal or management of solid waste or hazardous waste shall he subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including any requirement for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief, respecting control and abatement of solid waste or hazardous waste disposal in the same manner, and to the same extent, as any person is subject to such requirements, including the payment of reasonable service charges. Neither the United States, nor any agent, employee, or officer thereof shall be immune or exempt from any process or sanction of any State or Federal Court with respect to the enforcement of any such injunctive relief. The President may exempt any solid waste management facility of any department, agency, or instrumentality in the executive branch from compliance with such a requirement if he determines it to be in the paramount interest of the United States to do so. No such exemption shall be granted due to lack of appropriation unless the President shall have specifically requested such appropriation as a part of the budgetary process and the Congress shall have failed to make available such requested appropriation. Any exemption shall be for a period not in excess of one year, but additional exemptions may be granted for periods not to exceed one year upon the President's making a new determination. The President shall report each January to the Congress all exemptions from the requirements of this section granted during the preceding calendar year together with his reason for granting each such exemption.

CLEAN AIR ACT

42 USC Sec. 7418. Control of pollution from Federal facilities

COMPLIANCE WITH REQUIREMENTS, ADMINISTRATIVE AUTHORITY, PROCESS, AND SANCTIONS RESPECTING CONTROL AND ABATEMENT OF AIR POLLUTION

(a) Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any property or facility, or (2) engaged on any activity resulting, or which may result, in the discharge of air pollutants, and each officer, agent, or employee thereof shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of air pollution in the same manner, and to the same extent as any nongovernmental entity. The preceding sentence shall apply (A) to any requirement whether substantive or procedural (including any recordkeeping or reporting requirement, any requirement respecting permits and any other requirement whatsoever), (B) to the exercise of any Federal, State, or local administrative authority, and (C) to any process and sanction, whether enforced in Federal, State, or local courts or in any other manner. This subsection shall apply notwithstanding any immunity of such agencies, officers, agents, or employees under any law or rule of law. No officer, agent, or employee of the United States shall be personally liable for any civil penalty for which he is not otherwise liable.

Private Party Actions Against Federal Officials for Environmental Wrongs

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Recent events have made it clear that federal officials [1] can no longer assume that they will be held personally unaccountable for violations of environmental laws that they may commit in the course of their work for the Government. Such violations, even though committed in an official capacity, can result in criminal convictions and civil liability to the Federal Government.[2] As it becomes more apparent that one's official position is no longer a shield against environmental actions brought by the Federal Government, private litigants will increasingly name federal officials in their individual capacity[3] as defendants in civil suits attempting to redress environmental wrongs.

This article will briefly explore (1) some of the types of actions that may be brought against federal officials by private litigants; (2) the defenses and immunities that may be used by the federal official; and (3) the availability of Department of Justice representation in such actions. Determining a federal official's liability in such actions requires analysis of complex environmental statutes, common and constitutional law, as well as statutes and case law addressing the liability of federal officials generally. To date there have been few attempts to name federal officials individually in such actions. Consequently, much of what is discussed in this article is by necessity reasoned speculation. However, experience suggests that speculative causes of action do not remain merely speculative for long.

I. INDIVIDUAL LIABILITY IN THE ENVIRONMENTAL CONTEXT

Although there has been a great deal of judicial activity with regard to the individual liability of corporate officials for environmental wrongs committed by their corporations, little has been done to address the potential civil liability of federal

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1. The term "federal official" is used in this article to refer to all officers and employees of the Federal Government.

2. Recently three federal employees were convicted for violating various federal criminal environmental statutes associated with the treatment and disposal of hazardous wastes at the Army's Aberdeen Proving Ground. United States v. Dee, Criminal No. HAR–88–0211 (D. Md. _____ 1989) (unpublished opinion). *See generally*, Bartus, *Federal Employee Personal Liability Under Environmental Law: New Ways for the Federal Employee to Get in Trouble*, 31 A.F.L. REV. 45 (1989).

3. In civil actions against federal officials in their individual capacity, plaintiffs seek damages directly from the personal assets of the federal official as opposed to the Government. This type of action differs from one brought against a federal official in his official capacity. An official capacity civil action is, in reality, an action directed against the United States and recovery or relief would come from the United States.

officials.[4] While analogizing the federal official to the corporate officer oversimplifies the status of each and overlooks many distinctly different legal rights inherent in the two positions, an understanding of recent developments involving individual corporate officer civil liability is important to this analysis. It may forecast the direction federal courts might move with regard to federal official civil liability.

Traditionally, federal officials, just as their corporate officer counterparts, have found a certain degree of protection from individual civil liability by virtue of their status as an officer of a large organization. Officers or employees of an organization, whether the organization is a corporation or the Government, have traditionally not been civilly liable for the tortious acts of the organization or its members unless they personally participated or authorized the wrongful act.[5] In the corporate context officers or employees with no personal involvement in the wrongful act could not be held liable unless the corporate veil was pierced. This was done by establishing that the corporation was so dominated by the officer as to constitute his alter ego[6] or that the corporation had been established to defraud or avoid liability by abuse of the corporate form.[7]

In the environmental context, however, the insulation of corporate officials from individual liability appears to be eroding. While a few courts have clung to the traditional principles,[8] most courts have shown a willingness to expand the individual corporate officer's civil liability. Although, in many of these cases, courts have addressed liability by focusing upon an officer's direct involvement,[9] others have clearly indicated that liability may exist without "piercing the corporate veil" or direct official involvement. These courts have suggested that liability may also arise from the official's ability to "control" the activities that gave rise to the environmental wrong.[10] In many of these cases, the courts have also carefully examined the provisions of the statutes involved to determine if the individual fit within the description of one of the classes of liable parties. If so, liability has been imposed because by definition the individual qualified as a liable party.[11]

Even though these decisions have arisen in actions brought by the Federal Government or a state against corporate officers, their fundamental holding would appear

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4. Reported actions involving environmentally related suits of federal officials in their individual capacity are rare. Meyer v. United States Coast Guard, 644 F. Supp. 221 (E.D.N.C. 1986) is an example of state action against the Commandant of the Coast Guard in his individual capacity. The action was dismissed upon determination that sovereign immunity had not been waived.

5. *See generally* 18B AM. JUR.2d *Corporations* § 1877 (1985).

6. *E.g.*, Flynt Distributing Co. v. Harvey, 734 F.2d 1389 (9th Cir. 1984). *See generally* 18 AM. JUR.2d, *Corporations* § 45 (1985).

7. *E.g.* American Bell, Inc. v. Fed' of Tel. Workers, 736 F.2d 879 (3d Cir. 1984); Carpenters Health & Welfare Fund v. Kenneth R. Ambrose, Inc., 727 F.2d 279 (3d Cir. 1983). *See generally* 18 AM. JUR.2d, *Corporations* § 50 (1985).

8. *E.g.*, Joslyn Corp. v. T.L. James & Co., Inc., 696 F. Supp. 222 (W.D. La. 1988) (individual corporate liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 U.S.C. §§ 9601–57 should not be imposed without a clear congressional directive).

9. *E.g.*, United States v. Wade, 577 F. Supp. 1326 (E.D. Pa. 1983) (liability under CERCLA); United States v. Mottolo, 22 E.R.C. 1529 (D.N.H. 1985) (liability under CERCLA).

10. *E.g.*, United States v. Northeastern Pharmaceutical and Chemical Co. (NEPACCO), 810 F.2d 726 (8th Cir. 1986) (liability under Resource Conservation and Recovery Act (RCRA) 42 U.S.C. §§ 6901–87 and CERCLA); United States v. Bliss, 667 F. Supp. 1298 (E.D. Mo. 1987) (liability under CERCLA); United States v. Carolawn Co., 21 E.R.C. 2124 (D.S.C. 1984) (liability under CERCLA).

11. *E.g.*, United States v. NEPACCO, 810 F.2d 726 (8th Cir. 1986) (officer of corporation liable under CERCLA as one "arranging for disposal", and under RCRA as person "contributing" to disposal that may present imminent and substantial endangerment); Vermont v. Staco, Inc., 684 F. Supp. 822 (D. Vt. 1988) (corporate officers found to be persons "contributing" to disposal under RCRA); *Mottolo*, 22 E.R.C. 1529 (D.N.H. 1985) (officer of corporation liable under CERCLA as one "who arranged for disposal").

just as applicable in a private action against a federal official. For this reason, it is possible that in future private actions the individual liability of federal officials may depend not only upon whether they were directly involved in the liability creating activity, but also upon whether they fit within the statutory definition of liable parties or were in a position to "control" the activities giving rise to the environmental wrong. The following sections will briefly discuss various environmental causes of action and the risk of individual liability each poses to federal officers.

II. POTENTIAL CAUSES OF ACTION

Private litigants could involve a federal official in an environmental suit under a variety of theories. These theories could evolve from statutory, common law, or constitutional law. The potential remedies and defenses, including immunities, will in large measure depend upon the theory or combination of theories under which the action is brought.

A. Federal Statutorily Derived Causes of Action

The majority of the federal environmental statutes contain provisions that permit private citizens to bring an action to enforce their requirements. These so-called "citizen suit" provisions have been used by private parties against corporations and individuals to enforce environmental laws.[12] It is clear that these citizen suit provisions may be used by private parties in actions seeking to force the Federal Government to comply with environmental laws and regulations.[13] Moreover, these citizen suit provisions are written so broadly that it would appear that given the right set of facts a federal official could be named in his individual capacity.

The citizen suit provisions in each of the major environmental statutes follow the same general format.[14] Those found in the Clean Air Act (CAA),[15] the Clean Water Act (CWA),[16] the Resource Conservation and Recovery Act (RCRA),[17] and the Comprehensive Environmental Response, Compensation and Liability Act

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12. *See generally* Miller, *Private Enforcement of Federal Pollution Control Laws*, 13 Envtl. L. Rep. (Envtl. L. Inst.) 10,309 (1983); 3 COOKE, THE LAW OF HAZARDOUS WASTE § 1603 (1988).

13. Each environmental act's citizen suit provision lists the United States as a person against whom action may be brought. *E.g.*, Clean Water Act, § 505(a)(1), 42 U.S.C. § 1365. Due to sovereign immunity, however, there are limitations upon what the Government may be ordered to do in these actions. Lotz, *Federal Facility Provisions of Federal Environmental Statutes: Waiver of Sovereign Immunity for "Requirements" and Fines and Penalties*, 31 A.F.L. REV. 7 (1989).

14. In addition to the acts discussed in the text of this article, each of the following environmental acts are among those that contain a citizen suit provision: Toxic Substances Control Act, § 20, 15 U.S.C. § 2619; Surface Mining Control and Reclamation Act, § 520, 30 U.S.C. § 1270; Marine Protection, Research, Sanctuaries Act of 1972, § 105(g), 33 U.S.C. § 1415(g); Noise Control Act § 12, 42 U.S.C. § 4911; Safe Drinking Water Act, § 2(a), 42 U.S.C. § 300j–8.

15. The Clean Air Act (42 U.S.C. §§ 7401–7642) citizen suit provision is found at section 304, 42 U.S.C. § 7604. It provides in pertinent part that:

> Any person may commence a civil action on his own behalf—
> (1) against any person (including (i) the United States, and (ii) any other governmental instrumentality or agency to the extent permitted by the Eleventh Amendment to the Constitution) who is alleged to be in violation of (A) an emission standard or limitation under this chapter or (B) an order issued by the Administrator or a State with respect to such a standard or limitation,
> The district courts shall have jurisdiction . . . to enforce such an emission standard or limitation, or such an order . . . as the case may be

16. The Clean Water Act (33 U.S.C. §§ 1251–1387) citizen suit provision is found at section 505, 33 U.S.C. § 1365.

17. 42 U.S.C. §§ 6901–6991i.

(CERCLA),[18] are generally representative of all citizen suit provisions. The CWA citizen suit provision provides that:

> [A]ny citizen may commence a civil action on his own behalf—. . . against *any person* (including (i) the United States . . .) who is alleged to be in violation of (A) an effluent standard or limitation under this chapter or (B) an order issued by the [EPA] Administrator or a State with respect to such standard or limitation . . . .[19]

The RCRA citizen suit provision authorizes "any person" to "commence a civil action on his own behalf . . . against *any person* . . . who is alleged to be in violation of any permit, standard, regulation, condition, requirement, prohibition or order which has become effective pursuant to [RCRA]."[20] RCRA also permits "any person" to commence a civil action against "*any person* . . . who has *contributed* or is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste which may present an imminent and substantial endangerment to the health or the environment."[21]

CERCLA, like RCRA and CWA, contains a citizen suit provision that authorizes private actions against "any person" in violation of the statute's requirements.[22] However, CERCLA is unique in that it also contains a provision that provides private parties the right to recover the costs they have incurred in responding to the release or threat of release of hazardous substances from facilities from four classes of defendants. These classes include: (1) current owners and operators of the facility; (2) past owners and operators of the facility; (3) those who arrange for disposal of hazardous wastes that were disposed of at the facility; and (4) transporters of hazardous wastes that were disposed of at the facility.[23]

Under the various environmental statutes, therefore, there are two general types of private party actions. First, a private party may bring a citizen suit to enforce the provisions of the statute or a regulation or order promulgated under it. Second, under RCRA and CERCLA, a private party may bring an action to force the cleanup of a environmentally hazardous condition or recover the costs of such a cleanup. In both situations it appears possible that a federal officer or employee could be named as a defendant. In each case, with the exception of CERCLA section 107 cost recovery actions, an action may be brought against "any person" who has engaged in the act creating liability and the term "person" in each of these statutes is defined broadly enough to include federal officials.[24]

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18. *Id.* at §§ 9601–9675.
19. CWA, § 505, 33 U.S.C. § 1365 (emphasis added).
20. RCRA § 7002(a)(1)(A), 42 U.S.C. § 6972(a)(1)(A) (emphasis added).
21. RCRA § 7002(a)(1)(B), 42 U.S.C. § 6972(a)(1)(B) (emphasis added).
22. CERCLA § 310, 42 U.S.C. § 9659.
23. CERCLA § 107(a)(4)(B), 42 U.S.C. § 9607(a)(4)(B).
24. CAA § 302, 42 U.S.C. § 7606; CWA § 502(5), 33 U.S.C. § 1362(5); RCRA § 1004 (15), 42 U.S.C. § 6903(15); CERCLA § 101(21), 42 U.S.C. § 9601(21). At least one commentator has suggested that "absent a compelling reason to pierce the corporate veil," corporate officers, owners or employees would not be civilly liable under the citizen suit provisions since under the statutes the term "person" does not specifically include corporate officers, owners or employees. Miller, *supra* note 12 at 10,318. This conclusion was based upon decisions under the Rivers and Harbors Act of 1899, 33 U.S.C. § 403, in which the courts found that corporate officials could not be held personally liable for penalties since the Act did not make them personally liable for corporate acts. By the same logic a public official could argue that he was not personally liable under the majority of these statutes since all except the Clean Air Act do not specifically include officers of the United States in their definition of "person." This proposition is not at all clear. Recent cases have focused not upon whether corporate officers were specifically *included* in the definition of "person" but upon the fact that they were not specifically *excluded* in the definition. *E.g.*, United States v. NEPACCO, 810 F.2d at 745; Vermont v. Staco, Inc., 684 F. Supp. at 835.

B. Actions to Enforce Environmental Standards

As a practical matter, federal officials would appear to have little to fear from a citizen suit to enforce a statutory or regulatory requirement. Such actions may only be brought to enjoin statutory or regulatory violations or to require that court impose civil penalties that are assessable for the violations.[25] However, citizens may not use for damages under these provisions.[26] Consequently, there is little incentive for a suit for injunctive relief or civil penalties against a public offical in his private capacity, because the Government is more likely to have the large sums necessary to pay a civil penalty or finance action necessary to come into compliance. Moreover, some environmental statutes contain provisions specifically addressing federal facility compliance that make it clear that officers of the United States shall not be personally liable for a civil penalty for which they are not otherwise liable[27] and that arises from the performance of their official duties.[28] This language would make it very difficult to collect a civil penalty from a public official under these statutes.

While RCRA contains a provision specifically waiving immunity for officers of the Government for actions seeking injunctive relief,[29] the fact remains that only the Government would be capable of performing the injunctive relief. The exposure of the official to actions seeking to enforce environmental standards or to obtain civil penalties for violations would, therefore, appear limited.[30]

C. Actions for CERCLA Response Costs or RCRA Abatement

A greater risk of public official exposure under the federal environmental statutes would appear to arise from the RCRA and CERCLA provisions that allow a private party either to force a cleanup or to recover money for a cleanup it has already conducted. This is because in a series of cases under CERCLA and RCRA, the Government has been successful in suing corporate officials for the activities of their corporations on the theory that they were an "owner or operator"[31] or one who "arranged for disposal"[32] under CERCLA section 107 or a "contributor"[33] under RCRA, section 7003. The courts found these officials to be individually liable either because of their *significant involvement* in the corporate activities leading to the statutory violation or because they were in a position to *control* the activities of the corporation that lead to the violation.

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25. RCRA, section 7002(a), 42 U.S.C. § 6972; CWA, section 505, 33 U.S.C. § 1365 and CERCLA, section 310(c), 42 U.S.C. § 9659(c) provide for imposition of civil fines in addition to the enforcement of requirements. Other environmental acts, such as the Clean Air Act, do not provide for imposition of civil penalties. Sovereign immunity arguments have been used to avoid imposition of civil penalties against the United States under these acts. Lotz, *supra* note 13. The extent to which such immunity might also be available to the individual federal official is uncertain. *See* Bartus, *supra* note 2.

26. *E.g.*, Sierra Club v. SCM Corp., 580 F. Supp. 862 (W.D.N.Y. 1984) *aff'd* 747 F.2d 99 (2d Cir. 1984); City of Philadelphia v. Stepan Chemical Co., 544 F. Supp. 1135 (E.D. Pa 1982).

27. Clean Air Act, § 118, 42 U.S.C. § 7418.

28. Clean Water Act, § 313, 33 U.S.C. § 1323.

29. RCRA, § 6001, 42 U.S.C. § 6961.

30. *See generally* Donnelly and Van Ness, *The Warrior and the Druid—The DOD and Environmental Law*, 33 FED. B. NEWS & J. 344 (1986) for a discussion of the various civil penalty provisions.

31. *E.g.*, *NEPACCO*, 579 F. Supp. 823, 849 (W.D. Mo. 1984), *aff'd* 810 F.2d 726, 734 (8th Cir. 1986); New York v. Shore Realty Corp., 759 F.2d 1032 (2d Cir. 1985); United States v. Carolawn Co., 14 Envtl. L. Rep. (Envtl. L. Inst.) 20,699 (D.S.C. 1984).

32. *E.g.*, United States v. Northernaire Plating Co., 670 F. Supp. 742 (W.D. Mich. 1987); United States v. Bliss, 667 F. Supp. 1298 (E.D. Mo. 1987).

33. *NEPACCO*, 810 F.2d at 745.

While nearly all the CERCLA and RCRA decisions applying a "significant involvement" or "control" test to find individual liability have been actions brought by the Federal Government in its enforcement capacity and the individuals found to be liable have been corporate officials, there appears little reason why the same theories could not be applied in a private party action to reach a federal official. The statutory provisions that a private party would use to bring action under CERCLE or RCRA are either identical to those used by the Government[34] or are so substantially similar that the same reasoning could be used to reach federal officials.[35]

This similarity of statutory language permits one conceptually to substitute a base commander or a civilian maintenance supervisor for the corporate defendants in cases such as *United States v. Bliss*.[36] In *Bliss*, the court found both a corporation's plant supervisor and chief executive officer personally liable for the United States' response costs under CERCLA section 107 because they had ultimate authority for decisions regarding disposal and because they arranged for the disposal of waste at the site where the response costs where incurred.[37]

D. Common Law Environmental Torts

Historically, federal officials, including officials of the Air Force, have been the subject of common law suits that have evolved from their official duties. The variety of types of common law suits against federal officials is endless. These cases range from actions alleging defamation to those alleging tortious interference with business relations. While results of litigation involving these types of cases against federal officials have been almost always adverse to plaintiffs[38] and various immunities are available to protect public officials from such actions,[39] it can be expected that such actions will continue to be brought either alone or in conjunction with claims alleging statutory or constitutional violations. Similarly, plaintiffs in environmental cases will attempt to reach government officials through environmentally related common law tort theories of liability.

A variety of common law torts can be raised in the environmental context. Included among these "environmental torts" are nuisance, trespass, and negligence. In each type of action, the essential elements are similar to the elements that would have to be established were the cause of action pled in the nonenvironmental context. The principle difference, however, is that the action would involve an environmentally related harm of some type. For example, a traditional nuisance action is designed to abate an interference with one's use and enjoyment of land as a result another person's activities.[40] An environmental nuisance action differs from a traditional nuisance action primarily because the alleged interference arises from ground or surface water pollution, soil contamination, damage to riparian rights or personal injury caused by air or water pollution.[41] Similarly, an environmental trespass action differs from a traditional trespass action, which is designed to protect a landowner's

34. CERCLA, § 107, 42 U.S.C. § 9607.
35. *Compare* RCRA, § 7002(a)(1)(B), 42 U.S.C. § 6972(a)(1)(B) *with* RCRA, § 7003, 42 U.S.C. § 6973.
36. 667 F. Supp. 1298 (E.D. Mo. 1987).
37. *Id.* at 1306.
38. *See generally* Euler, *Personal Liability of Military Personnel For Actions Taken In The Course of Duty*, 113 MIL. L. REV. 137 (1986).
39. *See infra* text accompanying notes 49 to 59.
40. *See generally* W. PROSSER & W.P. KEETON, THE LAW OF TORTS § 87 at 619–20 (5th ed. 1984); 3 COOKE, *supra* note 12, 17.01[2][a] at 17–11 (1988).
41. *See* 3 COOKE, *supra* note 12 § 17.01[2][b] at 17–11 and cases cited therein.

interest in real property from intentional invasion,[42] in that the alleged instrument of trespass is some form of air or water pollution.[43]

Since actions alleging common law environmental torts differ only slightly from their nonenvironmental common law counterparts, it can be anticipated that the same defenses and immunities applicable in the nonenvironmental context would apply.

E. Environmental Actions Pled as Constitutional Torts

Constitutional tort actions are often called "*Bivens*" actions, after the Supreme Court decision in 1971 that judicially created a cause of action allowing suit against federal employees in their individual capacities for alleged violations of citizens' constitutional rights.[44] Following *Bivens*, the Supreme Court expanded the concept of individual federal employee liability to include violations of the fifth amendment "due process' clause[45] and virtually all of the other fundamental rights outlined in the first thirteen amendments.

Constitutional torts in the traditional, nonenvironmental sense typically allege that an otherwise common law tort or injury has constitutional dimension, and is, therefore, appropriate for consideration by a federal district judge, and warrants the payment of damages from the individual federal official. It is important to remember, however, that the earlier discussion of remedies available to private persons offered by environmental statutes under "citizen suit" provisions are limited to enforcement of environmental standards or cleanup actions—not traditional civil damages.

The theories most often advanced by the plaintiff's bar for nonenvironmental constitutional tort-based actions are: (1) "Due Process" violations under the fifth and fourteenth amendments; (2) Illegal search allegations under the fourth amendment; and (3) Claims that first amendment rights—freedom of expression and expressive behavior—have been abridged or denied by the wrongful personal actions of a federal employee.

In the environmental context, it is difficult to conceive how a plaintiff might successfully plead a constitutional violation by a federal official in his individual capacity. This is not to say, however, that it will not be attempted. For example, in a current Air Force case owners of the land adjacent to Cannon Air Force Base are suing the County Zoning Board and various Air Force officials, including the base commander, in both their official and individual capacities alleging an unconstitutional taking of private property.[46] The crux of the suit is that the Air Force "AICUZ (Air Installation Compatible Use Zone) Study" was promoted by the Air Force to

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42. *See* PROSSER & KEETON, *supra* note 40 § 87 at 622.

43. *See generally* 3 COOKE, *supra* note 12 § 17.01[3][a] at 17–40. Representative cases involving allegations of environmental trespass include Miller v. Cudahy Co., 592 F. Supp. 976 (D. Kan. 1984); City of Philadelphia v. Stepan Chemical Co., 544 F. Supp. 1135 (E.D. Pa. 1982); United States v. Allied Chemical Corp., 587 F. Supp. 1205 (N.D. Cal. 1984).

44. Bivens v. Six Unknown Named Agents of the Federal Bureau of Narcotics, 403 U.S. 388 (1971). The Supreme Court created a money damages remedy personally against a federal official for violating the fourth amendment Constitutional rights of a citizen to be free from unreasonable search and seizure. The impact of the decision was to allow for the possibility of individual liability of federal public servants even when they were carrying out (or attempting to carry out) their federal duties.

45. Butz v. Economou, 438 U.S. 478 (1978). This decision also held that the federal defendant had the burden of affirmatively proving he was entitled to "qualified immunity," in that he acted reasonably and in good faith that his actions were lawful.

46. Snell v. Curry County, U.S. District Court for the District of New Mexico, Cause No. 85–788–M–CV.

the county, and used by the county as a basis for zoning certain land areas around the base. The plaintiffs claim the combined effort is unconstitutional and fails to compensate them for extensive property rights destroyed by the zoning ordinance.

In view of the Air Force's experience and the propensity of plaintiffs to plead common law torts as constitutional infringements, it would be reasonable to assume that in future actions against federal officials involving environmentally related causes of action plaintiffs might plead common law actions as constitutional infringements.

III. IMMUNITIES AVAILABLE TO FEDERAL OFFICIALS

In any civil action in which a federal official is sued individually for acts performed within the scope of his duties certain defense and immunities will be available. These have developed as a result of both statutory and case law. They would be applicable in environmentally related private civil actions to the same extent as in nonenvironmentally related actions.

A. Immunity in Common Law Actions

The approach to the defense of federal employees alleged to have committed common law torts changed dramatically during 1988. The risk of litigation posed to federal employees diminished significantly, as a result of the passage of the Federal Employees Liability Reform and Tort Compensation Act of 1988,[47] commonly referred to as the "*Westfall* legislation."

When the year began, *Barr v. Matteo*[48] was the seminal case, the one cited in every brief that asserted absolute immunity for federal employees from state-based common law tort causes of action. There was some variance from circuit to circuit, but in a fundamental sense, "scope of employment" was the litmus test. A secondary issue that played a part in the actual *Barr* decision, "whether the federal employee was exercising discretion," was arguably part of the qualifying test for immunity in some circuits, but by no means thought of as a necessity in others. The Supreme Court changed that thinking on January 13, 1988, when it announced its decision in *Westfall v. Erwin*[49] holding that "something more than minimal discretion" was required in order for a federal employee to qualify for absolute immunity from common law torts. How much discretion was needed was a question the Court did not answer, suggesting that Congress was in a better position to make that judgment.

The Department of Justice's successful effort to get clarifying legislation actually eliminated once again the "discretion" element from the equation. The "*Westfall*" legislation amended the Federal Tort Claims Act (FTCA)[50] to provide that the FTCA would be the exclusive remedy for common law tort claims arising from actions taken by federal employees within the scope of their employment.[51]

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47. Pub. L. No. 100–694, 102 Stat. 456 3.

48. 360 U.S. 654 (1959). A case in which the "black letter law" of official governmental immunity was set forth by the Supreme Court. It came to be understood that if a government employee was acting within the scope of his employment, he was protected from common law tort actions by "absolute immunity."

49. _____ U.S. _____, 108 S.Ct. 580 (1988).

50. 28 U.S.C. §§ 2679–80.

51. "Exclusive" remedy statutes are neither new nor novel to government litigation. Several other categories of suits against federal employees are subject to exclusive remedy provisions. See, for instance, 28 U.S.C. § 2679(b) (for suits against federal "Drivers"); 42 U.S.C. § 233; 38 U.S.C. §

Consequently, whenever a common law tort claim is based on the action of a federal employee, including members of the military, who were acting within the scope of their federal duties,[52] then that cause of action against the individual *in his individual capacity* is statutorily precluded. The United States Attorney certifies to the court that the federal employee was acting within the scope of federal duties, and then the government moves to dismiss the individual defendant from the lawsuit, substituting the United States in his place.[53] The sole remedy for the plaintiff, if any, then lies in an action exclusively against the United States under the FTCA.[54]

In most cases that can now be anticipated, the case after substitution will be ripe for a motion to dismiss, claiming that the administrative prerequisites of the FTCA (i.e., filing a claim with the agency and allowing the agency six months to render a decision before jurisdiction will lie in a federal district court), have not been met.[55] The application of the new legislation extends to all lawsuits alleging common law torts against federal employees for actions that arose in the course of their federal duties.[56] The legislative history makes clear that the revised section 2679(d) will apply to all claims not yet reduced to "final judgment."[57] Although the *Westfall* legislation alters fundamentally the law in the area of state-based common law tort causes of action, the legislation expressly does not apply to constitutional tort claims or to claims based on federal statutes.[58]

As a result of the *Westfall* legislation environmental common law actions such as nuisance, trespass, or negligence brought against federal officials in their individual capacity would appear to have little likelihood of surviving a motion to dismiss. The key in any such proceeding will be whether it is determined that the official was acting within the scope of his employment.

B. Qualified Immunity and Constitutional Torts

As a general rule, qualified immunity protects federal officers and employees sued for constitutional violations where their conduct does not violate clearly established constitutional rights. The current standard to be applied in measuring the

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4116; 22 U.S.C. § 817(a); and 10 U.S.C. § 1089(a) (for examples of restrictions on suits against federal medical personnel); and 10 U.S.C. § 1054 (for restrictions against bringing lawsuits against Department of Defense attorneys).

52. The legislation gives the Attorney General of the United States the power to decide whether an individual federal employee was acting within the scope of federal duties. (§ 2679(d)(1)–(3)). The Attorney General has formally delegated this power to the U.S. Attorneys across the country. 28 C.F.R. § 15.3.

53. That action should be little more than a formality, and marks the end of potential liability for the individual federal employee. However, the federal employee may continue to be important to the case as a witness or in some other nondefendant capacity.

54. All Federal Tort Claims Act procedures and defenses will apply. For that reason, it can be anticipated that many common law tort theories will fail to state a valid cause of action under the FTCA, given the statutory exceptions under 28 U.S.C. § 2680(h), for allegations of defamation, intentional torts, emotional pain and distress, and frustration of contract for employment or benefit.

55. The *Westfall* legislation anticipated this situation, and allows a plaintiff 60 days from the date his federal district court cause of action is dismissed to file the administrative claim. *See* 28 U.S.C. § 2401. It does specify, however, that in no case can a claim be filed more than two years after the date of the legislation's enactment.

56. The language of the technical amendment effecting the changes in § 2679(d) is very broad, and includes: "all claims, civil actions and proceedings pending on, or filed on or after, the date of enactment of this Act." Federal Employees Liability Reform and Tort Compensation Act of 1988, § 8(b).

57. H.R. REP. No. 100–700 at 7.

58. 28 U.S.C. § 2679(b)(2).

employee's conduct is whether the act or omission was "objectively reasonable."[59] The test simply asks whether a reasonable person would know that he was violating a "clearly established" constitutional right of a plaintiff.[60] The Court emphasized that the doctrine it was trying to define was "immunity from suit rather than a mere defense to liability."[61]

Qualified immunity extends to persons at all levels of the Federal Government whose acts can result in constitutional infringements. This immunity is not limited to policy-making or senior officials only.[62] This is settled law in light of the Court's more recent decisions in cases such as *Anderson v. Creighton*[63] and *Malley v. Briggs*,[64] which recognized that law enforcement officers were protected by qualified immunity.

In defining the term "clearly established," the *Anderson* court stated:

> The contours of the right must be sufficiently clear that a reasonable official would understand that what he is doing violates that right. This is not to say that an official action is protected by qualified immunity unless the very action in question has previously been held unlawful; but it is to say that in the light of preexisting law the unlawfulness must be apparent.[65]

From the perspective of a federal employee, the "objectively reasonable" standard and the development of presumptions favoring the federal employee regarding "unsettled" areas of the law both point to a very low risk under consitutional tort theories, provided the employee is exercising common sense in the performance of his federal duties and responsibilities. Consequently, a federal official or employee who is attempting to conform to the requirements of applicable environmental laws would appear, at the very least, to be able to assert qualified immunity in a private party action alleging what would amount to an environmentally related constitutional tort.

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59. The early standard, announced in Butz v. Economou, 438 U.S. 478 (1978), contained subjective elements, such as a "good faith" belief that the federal employee's conduct was reasonable and lawful, but problems developed in trying to establish that premise. Many courts believed it was a question for juries, and the "burden of trial" became a foreseeable evil for federal defendants, even when they were resisting clearly nonmeritorious complaints. In response to the difficulties, the Supreme Court eliminated the subjective part of the equation, and announced a purely objective test. Harlow v. Fitzgerald, 457 U.S. 800 (1982).

60. *Harlow*, 457 U.S. 800 (1982). In that case, the Supreme Court stepped away from the "good faith" defense that had been the essence of *Economou*,(where both a subjective and an objective element were necessary components to establish the qualified immunity for federal employees), and reformulated the test, stating: "[G]overnment officials performing discretionary functions generally are shielded from liability for civil damages insofar as their conduct does not violate clearly established statutory or constitutional rights of which a reasonable person would have known." 457 U.S. at 818.

61. Mitchell v. Forsyth, 472 U.S. at 526 (1985).

62. *See e.g.*, Sladana v. Garza, 694 F.2d 1159, 1163-64 (5th Cir. 1982), *cert. denied* 460 U.S. 1012 (1983).

63. 483 U.S. _____, 97 L. Ed. 2d 523 (1987). *Anderson v. Creighton* helped define the central inquiry of this doctrine, e.g., "what was the clearly established law at the time the federal official acted, and did his conduct violate that law?" Lower courts had attempted to look at factual situations on the edge of generally accepted legal rights, and sometimes rejected qualified immunity when the facts could be interpreted either way, ruling in favor of further factual development in discovery and/or placing matters before the "triers of fact"—the juries. The Supreme Court rejected that approach, indicating that only preexisting law would be considered; no new or novel situations, or close calls, would be held against the federal official.

64. 475 U.S. 335 (1986).

65. 483 U.S. _____, 97 L. Ed. 2d 523 (citations omitted). In Mitchell v. Forsyth, 472 U.S. at 535, the Court had said earlier that as long as there was a "legitimate question" about the constitutionality of particular conduct, "it cannot be said that . . . [such conduct] violates clearly established law."

C. Alleged Statutory Violations and Immunity

In environmentally related actions brought against a federal official in his individual capacity that allege statutory violations, immunity may come from the statute itself. Should the statute not specifically address immunity, then the federal official might be able to assert the qualified immunity defense.

Many Federal statutes actually create a defense to statutory liability for federal officers. Where this is the case, a court is compelled to apply the defense as it is stated in the statute.[66] An example of such a provision in the federal environmental statutes is found in section 118 of the Clean Air Act.[67] This section, which addresses control of air pollution from federal facilities, provides a certain degree of immunity for federal officials from the payment of civil penalties by stating that, "No officer, agent, or employee of the United States shall be personally liable for any civil penalty for which he is not otherwise liable."[68] In defending a statutorily related action, therefore, the first place to search for a defense or immunity is the statute itself.

Even if the statute does not create a remedy or defense for the federal official, he may still be able to assert qualified immunity. This is implicit in the U.S. Supreme Court's discussion in *Davis v. Scherer*.[69] In *Davis* the Court indicated that officials may lose their immunity by violating clearly established statutory rights,[70] thus implying that immunity otherwise exists. Of course, even if there is a clear violation of a statute, the plaintiff must still establish that the violation contributed to the damages suffered.[71]

IV. DEPARTMENT OF JUSTICE REPRESENTATION

In any civil action against a federal official in his individual capacity, one of the most critical issues is obtaining representation from the Department of Justice. Service of process on the named federal defendants is generally the first indication any of the individuals have that they have been sued. It is important to note that while Department of Justice representation may be available, the individual must ask for it—representation is not automatic. The first step must be taken by the individual federal employee, and quickly—at least before the period specified in the summons for a responsive pleading has expired.

Any federal employee who appears to have been sued for doing something even remotely connected with his federal job is a candidate for Department of Justice representation. As a general premise, federal employees sued only in their "official" capacities would routinely (and automatically) be represented, and that fact is confirmed for Air Force people by AFR 110–24, paragraph 1–2.[72] Federal officials sued in their "individual" capacities are entitled to request the same representation.

66. *Cf.* Albemarle Paper Co. v. Moody, 422 U.S. 405 at 422–23 (1975).
67. 42 U.S.C. § 7418.
68. 42 U.S.C. § 7418(a).
69. 468 U.S. 183 1984).
70. *Id.* at 194 n.12.
71. *Id.*
72. 28 U.S.C. §§ 516–19 grants statutory responsibility to the Department of Justice for the representation of federal employees who are sued in their "official" governmental capacity. Typically, that responsibility is delegated to the Office of the U.S. Attorney located where the action was filed, and an Assistant U.S. Attorney, working in concert with an agency attorney, share the duty of responding to, and defeating, the complaint.

Unlike the "official" allegation lawsuit, loss or judgment rendered in an "individual" capacity lawsuit would make the individual federal employee responsible for the satisfaction of any damages award. Private counsel can also be hired by federal employees, either in concert with requesting government representation, or to act exclusively for the individual.

When federal employees who are sued in their "individual" capacities—either in civil or criminal proceedings[73]—request representation by the Department of Justice,[74] the representation decision will be based on two standards: (1) Was the federal employee "within the scope of his or her federal employment" regarding the conduct alleged in the complaint; and (2) Is it "in the interest of the United States" to provide representation to this federal employee.

Both standards are somewhat subjective. The first criterion, "scope of employment," requires a determination that the federal employee was attempting to carry out his federal duties. The second ceriterion, "in the interests of the United States," generally requires that the interests of the United States are served by defending the legality of the performance of the federal mission in question, and promoting the vigorous performance of duty by federal employees, who are thereby relieved from the burden of having to defend personally any lawsuits alleging wrong in their official conduct.[75] Drawing from experience, and the detailed guidance contained in three Department of Justice Torts Branch Monographs,[76] the decision at the Department of Justice is premised on the known facts, and reasonable presumptions, that are contained in the litigation report.

A refusal to grant representation is rare. The only case within the Air Force from September 1987 – March 1989 where representation was sought and not granted occurred in a National Guard case.[77] Nevertheless, it should be noted that a Department of Justice decision not to represent a federal employee cannot be officially challenged by the agency, and is not reviewable by the courts.[78] Because many environmental civil actions might arise from activities that could also constitute criminal violations, obtaining Department of Justice representation in some cases may present a "close call."

V. CONCLUSION

It can be anticipated that federal officials will increasingly find themselves defendants in their individual capacity in environmentally related private lawsuits. This

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73. Although "criminal" is mentioned in Air Force Reg. 110–24, the accepted meaning is a criminal prosecution by a state or local governmental enuity. In situations where a federal indictment has been issued, as in the well-publicized case of the three Army engineers at the Aberdeen Proving Ground (*see supra* note 2), federal representation is not authorized.

74. *See* 18 C.F.R. § 50.15.

75. The guidelines for evaluating representation requests are published at 28 C.F.R. § 50.15.

76. These are the current titles and dates: Monograph I, "Representation Practice and Procedure," (June 1984), Monograph II, "Rule 12 Personal and Jurisdictional Defenses," (June 1984), and Monograph III, "Immunity of Federal Employees in Personal Damages Actions," (July 1985).

77. In an action filed that involved Bivens-type tort claims against individuals, the requests for representation of three National Guard officers were denied. The Department of Justice (DOJ) found that the gravamen of the complaint was a military discharge from the State Guard unit. The plaintiff subsequently lost his federal technician status, but purely as a consequence of having lost his State Guard affiliation. DOJ found that the federal interest in the case was insufficient to warrant DOJ representation. The U.S. Attorney and agency counsel for the Air Force continued to participate in the case, because the National Guard Bureau and the Department of the Air Force had also been named. The State Attorney General's office stepped in to represent the Guard officers, three of whom have already been dismissed from the lawsuit.

78. *See* Falkowski v. EEOC, 764 F.2d 907 (D.C. Cir.1985).

will probably be true regardless of whether the United States can also be named as a defendant. Experience has shown that plaintiffs often name federal officials in their individual capacity even if there is a "deep pocket" available. Often they desire to put additional pressure on the federal agency involved by individually suing its officers or employees. Plaintiffs also name officers individually for wholly emotional reasons such as a desire for retribution or revenge. Obviously the best defense for federal officials is to understand environmental statutes and regulations that relate to their activities and to attempt to conform to these requirements.

Federal Employee Personal Liability Under Environmental Law: New Ways for The Federal Employee to Get in Trouble

MAJOR JOHN J. BARTUS, USAF

On June 28, 1988, three civilian employees of the United States Army at the Aberdeen Proving Ground received some bad news. A Federal grand jury in Baltimore, Maryland returned a five count indictment against them. [1] The indictment charged these three employees with federal criminal environmental offenses, *i.e.*, with the illegal treatment, storage, and disposal of hazardous waste under the Resource Conservation and Recovery Act of 1976 (RCRA),[2] and with water pollution violations under the Clean Water Act (CWA). [3] The bad news continued. On February 23, 1989, the United States District Court for the District of Maryland found all three of

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1. The three employees were senior managers of the munitions directorate of the Chemical Research Development and Engineering Center (CRDC) at Aberdeen. The CRDC is responsible for developing and managing the Army's offensive and retaliatory chemical warfare, including binary weapons. The most senior of the three employees is William Dee, the Director of the Munitions Directorate—an Executive Schedule (ES) Step 4. Also indicted were: Robert Lentz, the Chief of the Producibility Engineering and Technology (PET) Division of the Munitions Directorate—a GS–15; and Carl Gepp, the Chief of the Processing Technology Branch in the PET Division and the manager of the specific chemical research facility during the time period covered by the indictment—a GS–14. U.S. Dep't of Justice, U.S. Attorney for the District of Maryland, Press Release, June 28, 1988; Baltimore Morning Sun, June 29, 1988, at 1A.

The Aberdeen case is not the first federal criminal environmental indictment involving the conduct of federal employees. On December 1, 1987, a Federal grand jury in Texas returned a six-count indictment charging three former federal prison employees with illegally disposing of 60 drums of hazardous solvents. Each defendant was sentenced to three-years probation on each count, running concurrently; 1000 hours of community service; and a $50 assessment on each account. 1987 Env't Rep. (BNA) No. 33, at 1832 (May 1, 1987–Apr. 30, 1988).

2. 42 U.S.C. § 6928.

3. 33 U.S.C. § 1311. The indictment did not allege that the defendants took any actions beyond the scope of their respective duties or outside of their official capacities. Brown, Harris, and Cox, *The Liability of the Employee of a Federal Agency Charged with Criminal Environmental Violations—Do the Rules of Fair Play Apply to the Football?*, 35 F.B.A. FED. BAR NEWS & J. Dec. 1988, at 441, 442 [hereinafter *Liability*]. The indictment did not mention any specific individual actions alleged to have been taken by the three employees. Rather, the alleged criminal liability was based "entirely on the official positions of authority" held by the three employees. *Id.*

Specifically, the indictment charged five counts. There were four counts under the hazardous waste dumping statute, Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6928. In addition, there was one count under the Clean Water Act (CWA), 33 U.S.C. § 1311.

The RCRA counts charged that the defendants knowingly stored, treated, and disposed of hazardous waste and chemicals from 1983 to 1986 knowing that the requisite permit had not been obtained. Counts 1, 2, and 3 addressed a site at Aberdeen called the Pilot Plant site. Carl Gepp was the Pilot Plant manager. *See supra* note 1. Count 1 charged the unlawful storage, for 14 months, of a large quantity of dimethyl polysulfide, a hazardous component that is used in certain weapons. Count 3 charged the unlawful dumping into the sanitary sewer system of a variety of toxic substances over a three-year period. Count 2 charged that numerous waste hazardous chemicals were illegally stored and disposed of over a period of years including periods after notice of the safety hazard had been given. This count alleged that these chemicals were stored in a dangerous and haphazard manner over a period of years in a storage shed located near the Pilot Plant. It further alleged that many of the containers in this shed were unlabelled, deteriorated, and broken and that some of the chemicals were extremely dangerous and volatile and included ethyl acetate, hydrazine, picric acid, and ethyl ether.

Count 4 addressed another site at Aberdeen. This other site is known as the Old Pilot Plant and was abandoned in 1978. Count 4 charged that hazardous waste was improperly stored and disposed of at this

the employees guilty of criminal violations of RCRA.[4] The three employees face substantial maximum sentences of up to fifteen years imprisonment and fines of up to $750,000.[5] Quite apart from the potential sentences, the three employees have already incurred substantial expense. Since the indictments charged federal crimes, the Department of Justice refused requests for representation. The three employees had to pay for their own defense.[6]

The issue of personal liability of government employees is not new. From something as routine as filing travel vouchers to something as complex as a military commander authorizing a search of a barracks, government employees daily perform acts that, if done improperly, can subject them to personal liability. So, in one sense, the potential personal liability of a government employee for violations of environmental laws is merely more of the same.[7] But, in part, because it is relatively new, personal environmental liability is, at least for the moment, different. The environmental statutes are themselves relatively new and the furor over personal liability is newer still.[8] These statutes have created a host of new obligations and so a host of new ways for the federal employee to get in trouble.

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other site from 1978 to the summer of 1986. Specifically, it said that leaking drums containing hazardous materials were stored inside and outside the facility.

Count 5 of the indictment charged a violation of the CWA. It charged that the defendants were illegally discharging into a nearby creek pollutants, specifically hydrosulfuric acid, on September 17 and 18, 1985. The allegation was that this discharge resulted in a fish kill. The count also alleged that the dike surrounding the hydrosulfuric acid tank was in a deteriorated condition and was known to be so by the defendants and was incapable of containing any acid spill including the spill that occurred in 1985.

4. Carl Gepp, the Pilot Plant manager, was found guilty of Counts 1, 2, and 3. Robert Lentz, Mr. Gepp's supervisor, was found guilty of Counts 1, 3, and 4. And William Dee, Mr. Lentz's supervisor, was found guilty of Count 4. The jury was unable to reach a verdict on Counts 4 and 5 for Mr. Gepp, Counts 2 and 5 for Mr. Lentz and Counts 1, 2, 3, and 5 for Mr. Dee. For a discussion of the specifics of the five-count indictment, *see supra* note 3. In addition, *see supra* note 1, for a description of the positions of the three individuals at Aberdeen.

5. Gepp and Lentz face a maximum sentence of 15–years imprisonment and a maximum fine of $750,000 each. Mr. Dee faces a maximum sentence of 5-years imprisonment and a $250,000 fine. As of this writing, sentencing had not been completed.

6. *See infra* notes 39–41 and accompanying text. This is not to suggest that the expenses of defending a criminal indictment should be a factor in determining the sentence. Rather, it is simply to point out the exposure that a federal employee can face. In addition to possible imprisonment and fines, a federal employee charged with federal environmental crimes faces the cost of defending against prosecution.

Of course, the expense of defending a criminal environmental prosecution can be significant. For the Aberdeen employees, the legal fees were expected to reach $65,000 per person. Washington Post, Jan. 15, 1989, (Magazine) at 29.

The Washington Post article describes the three employees as caught up in the "sea change that occurred between D-Day and Earth Day, when society's passion for bigger and better bombs was superseded by its desire for a cleaner and safer world." *Id.* And the Post article makes clear the human costs of this change. *Id.*

7. There may be another difference. The *Aberdeen* indictments do not mention any specific *individual* conduct. Rather, they base criminal liability on the official positions of the defendants. *Liability*, *supra* note 3. And, as the authors observe, the press release issued by the U.S. Attorney at the time of the indictment referred to the Army's " 'institutional avoidance of the requirements of the environment laws' and stated that the charges in the indictment 'reflect the absolute disregard by the United States Army of the federal and state laws governing hazardous waste.' " *Id.* (quoting from press release). The authors use the terms "whipping boy" and "football" to describe the plight of the federal employee charged with official-capacity criminal indictments. *Id.* at 444. Where some federal *agencies* have not acted in a timely fashion to resolve violations of environmental laws, some federal prosecutors are venting their frustrations and seeking and obtaining criminal indictments against federal *employees* for their failure in their official capacity to comply with the law. *Id.*

8. *See supra* notes 6, 7. *See also* Long, *Criminal Prosecution of Environmental Laws: Semi-White Collar Crime*, 31 F.B.A. FED. BAR NEWS & J. 266 (1984). (There is an "increasing recognition" that criminal penalties can be used to complement civil enforcement and prosecutors, both federal and state, are giving "renewed attention" to this area).

The purpose of this article is to discuss this potential personal liability for the Government employee. The discussion focuses on civil and criminal liability and on federal and state sources of liability.

In order to p'ace a framework on the discussion, this article will focus on four of the most significant environmental statutes: the CAA;[9] the CWA;[10] the RCRA;[11] and the Comprehensive Environmental Resource, Compensation and Liability Act of 1980 (CERCLA or Superfund).[12] These statutes address different substantive areas of environmental law. But each of the four contains provisions imposing personal liability (or has been interpreted by the courts as imposing such liability). The courts have tended to apply similar rationales when interpreting these statutes. Hence, because of these similarities there are general rules that can been gleaned. But the questions are at bottom questions of statutory construction, and general rules are not a substitute for examination of the specific language of the individual statutes.

The four statutes have another trait in common. Each is an example of federalism in action. For example, the CWA has been described as a "cooperative federal/state scheme."[13] The same description would apply to each of the four.[14] In each case, the states have the authority (either inherently or as delegated by Congress) to enact legislation, to implement federal standards, and to enforce the laws. Because of this

9. 42 U.S.C. §§ 7401–7602. The Clean Air Act (CAA) defines and regulates two types of air pollution sources: stationary and mobile. Stationary sources are defined as any building structure or facility that emits air pollutants; mobile sources are motor vehicles, motor vehicle engines and aircraft. The CAA requires Environmental Protection Agency (EPA) to establish air quality standards. The states are then delegated responsibility to promulgate plans to implement these standards. These state plans are called State Implementation Plans. They are reviewed and approved by EPA.

10. 33 U.S.C. §§ 1251–1376. *See supra* note 3. The Clean Water Act (CWA) was enacted in 1972 as the Federal Water Pollution Control Act (FWPCA). Its purpose was to restore the "chemical, physical and biological integrity of the nation's waters" by eliminating the discharge of pollutants into the navigable waters. The CWA has been frequently amended but maintains the same basic structure. It controls water pollution through a permit system called the National Pollutant Discharge Elimination System (NPDES). 33 U.S.C. § 1342. Discharge is only allowed in accordance with the terms of the permit. Under the CWA, pollution control focused on the components and amount of discharge into navigable waters, rather than by having to discover the offending point source. Chesapeake Bay Foundation v. Virginia State Water Control Board, 495 F. Supp. 1229, 1232 (E.D.Va. 1980). Section 301 bans the discharge of any pollutant except in compliance with the Act. 33 U.S.C. § 1311. While this section clearly applies to pollutant discharges into navigable waters, it is unsettled whether it also applies to discharges into groundwater. *See* New York v. United States, 620 F. Supp. 374, 381 (E.D.N.Y. 1985). The Clean Water Act also regulates spills of oil and hazardous substances into waters of the United States. Except where permitted by statute, regulation, or NPDES permit, such discharges in amounts that EPA determines to be harmful are expressly prohibited. 33 U.S.C. § 1321. EPA is required to designate a list of hazardous substances.

11. 42 U.S.C. §§ 6901–91. *See supra* note 3. The RCRA was enacted in 1976 as an amendment to and overhaul of the Solid Waste Disposal Act. It regulates the treatment, storage and disposal of hazardous wastes by creating a "cradle to grave" regulatory system. The Federal Government, through the EPA, administers the program unless states choose to accept the federal program as their own. Under RCRA, states are encouraged to establish solid waste disposal plans, including provisions for closing open dumps. The criminal provisions of RCRA are described in note 64 *infra*.

12. 42 U.S.C. §§ 9601–57. The CERCLA was enacted in 1980 to provide rapid response to the nationwide threat imposed by the thirty to fifty thousand improperly managed hazardous waste sites in the country and to induce voluntary responses to those sites. United States v. Chem–Dyne Corp., 572 F. Supp. 802, 805 (W.D. Ohio, 1983). *See also* H.R. REP. No. 1016, 96th Cong. 2d Sess., pt. I, at 17–18, *reprinted in* 1980 U.S. CODE CONG. & ADMIN. NEWS 6119, 6119–20. CERCLA establishes a 1.6 billion dollar trust fund (Superfund). This Fund is drawn from industry and federal appropriations to finance the cleanup and containment efforts. 572 F. Supp. at 805. The state or Federal Government may then pursue rapid recovery of the cleanup costs incurred from those persons liable to reimburse the Superfund moneys expended. *Id.*

13. Shell Oil Company v. Train, 585 F.2d 408, 409 (9th Cir. 1978).

14. Note, *Assuring Federal Facility Compliance with the RCRA and Other Environmental Statutes: an Administrative Proposal*, 28 WM. & MARY L. REV. 513, 513–14 (1987).

cooperative structure, the federal employee faces not only federally imposed obligations, but perhaps state imposed obligations as well.

In addition, with regard to liability imposed under state law, a discussion of personal liability will bring us into the issue of sovereign immunity and into the related issue of the applicability of the various environmental statutes to government facilities. There are several ways that the sovereign immunity and personal liability issues intertwine.

Many of the environmental statutes deal with personal liability almost as a subset of sovereign immunity.[15] In some cases, the language that imposes personal liability and that waives sovereign immunity is the same language. In other cases, the language that imposes personal liability is merely similar to, or placed in the same section as, the language waiving sovereign immunity.

There are good reasons for this. If the federal facility is not subject to state imposed requirements initially, then the liability of the federal employee under those requirements is probably limited.[16] In such a case, the federal employee would be merely acting as an agent of the federal sovereign.[17]

Before turning to the personal liability question, the author will briefly discuss the sovereign immunity issue. It is not the intent of this article to provide a detailed discussion of sovereign immunity under the environmental statutes. That discussion is the subject of another article in this volume.[18] The purpose here is more limited: briefly to outline the rules and to discuss how those rules may affect the personal liability question.

I. SOVEREIGN IMMUNITY

The general rule is that the United States cannot be sued unless it has consented to be sued.[19] This waiver of sovereign immunity cannot be implied, rather it must be clearly and unequivocally expressed.[20] In addition, any waiver of sovereign immunity, once given, must be strictly construed and may not be modified by implication.[21]

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15. *See, e.g.*, section 6001 of RCRA, 42 U.S.C. § 6961; section 118 of the CAA, 33 U.S.C. § 7418; and section 313 of the CWA, 42 U.S.C. § 1323.

16. Relying on the waiver of sovereign immunity and the personal liability provisions contained in RCRA, section 6001, one court has suggested that a federal employee's civil liability is coextensive with the agency's sovereign immunity. Meyer v. United States Coast Guard, 644 F. Supp. 221 (E.D.N.C. 1986), was a state action under RCRA against both the Coast Guard and its commandant, Admiral Gracey, both individually and in his command capacity. In dismissing the action, the court held that section 6001 (42 U.S.C. § 6961) did not waive sovereign immunity so as to allow the state to seek penalties against the United States. Having dismissed the action against the United States, the court declined to resolve the issue of the admiral's individual liability. The court reasoned that its resolution of the sovereign immunity issue "negate[d] the need for [it] to consider the propriety of listing Admiral Gracey as a defendant." 644 F. Supp. at 223.

17. In California v. Walters, 751 F.2d 977 (9th Cir. 1984), the state's RCRA criminal prosecution of the administrator of the Veterans Administration failed. After each side agreed that the case was essentially against the United States, the court held that the waiver of sovereign immunity in RCRA did not subject the Federal Government to state criminal sanctions. 751 F.2d at 978–79. But, relative to the relationship of sovereign immunity and personal liability, the case contains an almost parenthetical caveat. The court concluded that its decision was compelled by the parties' agreement that the *action was one essentially against the sovereign*. The court then specified that its holding would not necessarily apply in all cases to prosecutions against federal officials or agencies. It concluded with a reiteration of prior holdings that sovereign immunity does not *ipso facto* exempt federal agencies and officers from the operation of ordinary criminal laws. 751 F.2d at 979, *citing* Morgan v. California, 743 F.2d 731 (9th Cir. 1984).

18. Lotz, *Federal Facility Provisions of Environmental Statutes: Waiver of Sovereign Immunity for "Requirements" and Fines and Penalties*, 31 A.F.L. REV. 7 (1989).

19. United States v. Michelle, 436 U.S. 206 (1983).

20. Hancock v. Train, 426 U.S. 167 (1976); Block v. North Dakota, 461 U.S. 273 (1983).

21. United States v. King, 395 U.S. 1 (1969).

In the context of State enforcement against federal facilities, the rule is that, like any legal entity, states are barred by sovereign immunity from suing the Federal Government except with the expressed consent of the Federal Government.[22]

Many sovereign immunity cases in the environmental law area involve attempts by states to hold the Federal Government liable for state fines or penalties.[23] There is a specific presumption against waivers of the Federal Government's sovereign immunity respecting state fines or penalties, and this presumption applies even where the Federal Government is generally subject by statute to state law.[24] The reason for this presumption is fairly straightforward. It reflects reluctance on the part of the courts to infringe on the constitutional authority of the Congress to spend money. "Unless Congress has made a *clear* decision that it intends funds to be spent in a specific manner the courts are loath to make that decision for Congress."[25]

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22. Block v. North Dakota, 461 U.S. at 280; State of Florida Dep't of Envt'l Regulation v. Silvex Corp., 606 F. Supp. 159, 161 (M.D. Fla. 1985).

23. For a more detailed discussion of the fines and penalties aspects of this issue, *see* Lotz, *supra* note 18.

For an interesting twist on the attempts to seek penalties under RCRA, *see* McClellan Ecological Seepage Situation (MESS) v. Weinberger, 655 F. Supp. 601, 603 (E.D. Cal. 1986).

Section 7002 of RCRA [42 U.S.C. § 6972] authorizes suits by citizens, and, at first blush, might appear to waive sovereign immunity. It allows any person to commence a civil action on his own behalf against any other person (including the United States and any other governmental entity) who is alleged to be in violation of any permit, standard, regulation, condition, requirement, prohibition or order issued under RCRA. In such a suit, the district court has jurisdiction to enforce the permit, standard, etc.; to order injunctive relief; and to apply any appropriate civil penalties under section 3008(a) and (g). 42 U.S.C. § 6928(a) and (g).

One might argue that, because states and local governments are persons, they have standing to initiate a citizen suit and recover penalties. The *MESS* court rejected this argument. Although the United States is subject to citizen suits, section 7002 does not waive sovereign immunity to make the United States subject to penalties. The *MESS* court observed that section 7002 defined "person" to include the United States for purposes of administering the statute and for jurisdiction. But the reference to civil penalties addresses section 3008(a) and (g), under which the United States is not encompassed within the definition of "person." The only conclusion possible is that Congress neither intended nor provided for a waiver of sovereign immunity for civil penalties under the citizen suit provision. 655 F. Supp. at 603–04.

For a discussion of the term "person" in section 3008(a) and in particular why that term does not include the United States, *see* Hoard, *Enforcement Tools Available against Federal Facilities Violating RCRA: Is a Bigger Hammer Needed?*, 3 NAT'L ENVT'L ENFORCEMENT J. 5, 6–7 (Dec. 1988–Jan. 1989).

24. United States v. Washington, No. C–87–291, slip op. at 2, (E.D. Wash., Jan. 22, 1988), 18 Envt'l L. Rep. (Envt'l L. Inst.) 20,363. *See also* Missouri Pacific R.R. v. Ault, 256 U.S. 554, 563–65 (1921).

25. *Hearings before the Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, House of Representatives*, 100th Cong., 1st Sess., No. 100–39 (Apr. 28, 1987) at 187–88.

See Meyer v. United States Coast Guard, 644 F. Supp. 221, 222 (E.D.N.C. 1986) (RCRA, section 6001 "does not clearly and unambiguously state that the Federal Government will be subject to fines and penalties"). *But see* Ohio v. Department of Energy, No. C–1–86–0217 (S.D. Ohio, Mar. 23, 1988) (since RCRA did make the Federal Government subject to all state requirements, both substantive and procedural, and since procedural requirements include enforcement requirements, the better reading is that Congress did waive immunity for civil penalties); Maine v. Department of the Navy, (D. Maine, Nov. 23, 1988) (to the same effect). *See infra* notes 26–27 and accompanying text for a discussion of "requirements."

With regard to the CWA, *see* United States v. Pennsylvania Envt'l Hearing Board, 584 F.2d 1273, 1277–78, n.20 (3d Cir. 1978) (the Federal Government is not liable for state or local penalties under the CWA).

But with regard to the CAA, *see* Alabama *ex rel.* Graddick v. Veterans Administration, 648 F. Supp. 1208, 1211–12 (M.D. Ala. 1986) (Federal Government is liable for civil penalties under the CAA); *National Oceanic and Atmospheric Agency Payment of Civil Penalty for Violation of Local Air Quality Standards*, Comp. Gen. Dec. B–191747 (June 6, 1978) (unpublished) (federal agency is liable for a civil penalty imposed by a local agency for violating local air quality standards); *In the Matter of Civil Penalties Imposed on Federal Agencies for Violations of Local Air Quality Standards—Source of Funds for Payment*, Comp. Gen. Dec. B–194508 (July 19, 1979), 58 Comp. Gen. 667 (to the same effect).

In addition to fines and penalties, there is another common denominator. The statutes generally subject the Federal Government to state "requirements"[26] and there has been substantial debate on the meaning of that term.[27]

For example, section 118 of the CAA makes federal facilities and *federal personnel* subject to all federal, state and local air pollution *requirements*, administrative authority, and process and sanctions "in the same manner and to the same extent as any nongovernmental entity."[28] Section 118 reads:

> Each department, agency and instrumentality of the . . . Federal Government (1) having jurisdiction over any property or facility, or (2) engaged in any activity resulting, or which may result, in the discharge of air pollutants, and *each officer, agent, or employee* thereof, shall be subject to, and comply with, all Federal, State, interstate, and local *requirements, administrative authority, and process and sanctions* respecting the control and abatement of air pollution in the same manner and to the same extent as any nongovernmental entity. The preceding sentence shall apply (A) to any requirement whether substantive or procedural (including any recordkeeping or reporting requirement, any requirement concerning permits, and any other requirement whatsoever), (B) to the exercise of *any Federal, State, or local administrative authority*, and (C) to *any process and sanction, whether enforced in Federal, State, or local courts or in any other manner*. This section shall apply notwithstanding any immunity of such agencies, officers, agents, or employees under any law or rule of law. *No officer, agent, or employee of the United States shall be personally liable for any civil penalty for which he is not otherwise liable*.[29]

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26. Note, *Assuring Federal Facility Compliance with the RCRA and Other Environmental Statutes: an Administrative Proposal*, 28 WM. & MARY L. REV. 513, 531 n.81 (1987) ("Given its pivotal role in the statutes, it seems likely that requirements is a term of art with a specialized meaning common to" RCRA, the CAA, and the CWA.).

27. *E.g.*, New York v. United States, 620 F. Supp. 374, 381–84 (E.D.N.Y. 1985) (discussing "requirements" under the CWA); State of Florida Dep't of Envt'l Conservation v. Silvex, 606 F. Supp. 159 (M.D. Fla. 1985) (discussing "requirements" under RCRA); United States v. Commonwealth of Puerto Rico, 721 F.2d 832 (1st Cir. 1983); Romero-Barcelo v. Brown, 643 F.2d 835 (1st Cir. 1981), *rev'd on other grounds, sub nom.* Weinberger v. Romero-Barcelo, 456 U.S. 305 (1982); EPA v. California *ex rel.* State Water Resources Control Board, 426 U.S. 200 (1976); and Hancock v. Train, 426 U.S. 167 (1976).

Several cases have wrestled with whether "requirements" included civil or criminal penalties. *California v. Walters* involved a state's attempt to read submission to state criminal sanctions into the section 6001 waiver. 751 F.2d 977 (9th Cir. 1984). In rejecting the argument, the court identified state waste disposal standards, permits, and reporting duties as requirements. Criminal sanctions, on the other hand, are the means by which the standards, permits, and reporting duties are enforced. *Id.* at 978. Similarly, a state argument that civil penalties were "procedural requirements" (for which immunity had been waived) was rejected in United States v. Washington, No. C–87–291–AAM, slip op. at 4 (E.D. Wash., Jan. 22, 1988). Relying on *Walters*, the court found that the penalties were the means by which requirements were enforced and that there was no waiver of sovereign immunity for these penalties.

See Hearings Before the Subcomm. on Oversight and Investigations of the Comm. on Energy and Commerce, H.R. Rep. No. 100–39, 100th Cong., 1st Sess. 230 (Apr. 28, 1987) (Statement of F. Henry Habicht II, Assistant Attorney General, Land and Natural Resources Division, Department of Justice). Mr. Habicht said: "[A]dministrative compliance orders—like civil and criminal penalties—are not 'requirements' and hence, are not within the waiver of sovereign immunity." He continued: "This argument draws its strength from the self evident proposition that compliance orders issued by EPA under Section 3008(a) are most appropriately considered a means of enforcing RCRA requirements rather than as 'requirements' themselves under Section 6001." *Id. See also* Hoard, *Enforcement Tools Available against Federal Facilities Violating RCRA: Is a Bigger Hammer Needed?*, 3 NAT'L ENVTL ENFORCEMENT J. 5, 7–8 (Dec. 1988-Jan. 1989).

See generally, Lotz *supra* note 18.

28. 42 U.S.C. § 7418 (emphasis added).

29. *Id.* (emphasis added).

Section 313 of the CWA contains similar language.[30] It also makes federal facilities and *federal personnel* subject to all state and local requirements. It reads:

> Each department, agency, or instrumentality of the . . . Federal Government (1) having jurisdiction over any property or facility, or (2) engaged in any activity resulting, or which may result, in the discharge or runoff of pollutants, and each *officer, agent, or employee* thereof in the performance of his official duties, shall be subject to, and comply with, all Federal, State, interstate, and local *requirements, administrative authority, and process and sanctions* respecting the control and abatement of water pollution in the same manner and to the same extent as any nongovernmental entity including the payment of reasonable service charges. The preceding sentence shall apply (A) to any requirement whether substantive or procedural (including any recordkeeping or reporting requirement, any requirement respecting permits, and any other requirement whatsoever), (B) to the exercise of *any Federal, State, or local administrative authority*, and (C) to *any process and sanction, whether enforced in Federal, State, or local courts or in any other manner. This section shall apply notwithstanding any immunity of such agencies, officers, agents, or employee* under any law or rule of law. Nothing in this section shall be construed to prevent any department, agency or instrumentality of the Federal Government, or any officer, agent, or employee thereof in the performance of his official duties, from removing to the appropriate Federal district court any proceeding to which the department, agency, or instrumentality or officer, agent or employee thereof is subject pursuant to this section, and any such proceeding may be removed in accordance with 28 U.S.C. § 1441, et. seq. *No officer, agent, or employee of the United States shall be personally liable for any civil penalty arising from the performance of his official duties, for which he is not otherwise liable*, and *the United States shall be liable only for those penalties arising under Federal law or imposed by state or local court to enforce an order or the process of such court.*[31]

Section 6001 of RCRA is a little different.[32] It makes federal facilities subject to state and local requirements but does not mention the federal employee vis-a-vis those requirements.[33] Section 6001 provides:

> Each department, agency and instrumentality of the . . . Federal Government (1) having jurisdiction over any solid waste management facility or disposal site, or (2) engaged in any activity resulting, or which may result, in the disposal or management of solid waste or hazardous waste shall be subject to, and comply with all Federal, State, interstate, and local *requirements*, both substantive and procedural (including any requirements for permits or reporting or any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting control and abatement of solid waste or hazardous waste disposal in the same manner, and to the same extent, as any person is subject to such requirements, including the payment of reasonable service charges. *Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State or Federal court with respect to the enforcement of any such injunctive relief.*[34]

CERCLA has a slightly different structure from that of the other three statutes. Under CERCLA, the costs of cleanup are met by the Superfund (or Fund), except at federal facilities where no Fund monies may be obligated. The Fund is largely financed by taxes on certain chemicals and petroleum products. The Fund, though, is reimbursed by the governmental legal action to recover cleanup costs from those parties identified as responsible for the contamination.

Claims procedures are mandated by CERCLA, section 112.[35] Claims must first be presented to those parties identified as responsible. Should they fail to satisfy the claim, the claimant may either sue in court or present the claim to the Fund for

30. 33 U.S.C. § 1323.
31. *Id.* (emphasis added).
32. 42 U.S.C. § 6961. An almost identical provision applicable to underground storage tanks appears in section 9007 of RCRA. 42 U.S.C. § 6991f.
33. *See infra* note 143 and accompanying text.
34. 42 U.S.C. § 6961 (emphasis added).
35. *Id.* at § 9612.

payment. If the Fund pays, it can recover from the responsible party through suit by the Attorney General.

Categories or persons liable for costs or removal and cleanup actions, or for injury to natural resources, or in suits by the Attorney General are described in CERCLA, section 107:

— the owner/operator of a vessel/facility;
— the person who owned/operated the facility (where the hazardous waste was disposed) at the time of disposal;
— the person who arranged for the treatment or disposal of the hazardous waste, i.e. generators; and
— transporters who select their sites.[36]

Section 120[37] specifies that CERCLA in general and section 107 in particular apply to the Federal Government. Its language is similar to RCRA in that it does not mention the federal employee. But there is another difference. CERCLA section 120 does not contain the term "requirements." Section 120 reads: [E]ach department, agency, and instrumentality of the United States (including the executive, legislative, and judicial branches of government) shall be subject to, and comply with, this Act in the same manner and to the same extent, both procedurally and substantively, as any nongovernmental entity, including liability under Section 107.[38]

II. INDIVIDUAL LIABILITY

In this section, the discussion of individual liability is into two broad categories: criminal liability and civil liability.

A. Criminal Liability

Federal Criminal Prosecution. From a purely technical perspective, this is the simplest question. The general rule is straightforward: Federal employees have no immunity from federal criminal prosecution by virtue of their federal employment. The federal employee is fully liable under the specific law being violated, just as if the person were not a federal employee. The federal criminal indictment and conviction of the three Government employees at Aberdeen is an example of this liability.

Moreover, federal employees charged with federal criminal violations must pay for their own defense. The Department of Justice policy on the Federal Government providing repesentation is clear: Representation is not available if the "representation requested is in connection with a federal criminal proceeding."[39] The Department of Justice represents the interests of the United States. In a federal criminal case, the interests of the United States are in the prosecution of the case, and not in the defeat of that prosecution. The Government's interests are not the same as the interests of the federal employee defendants and so it is not in the Government's interest to provide those employees with legal counsel.[40] For the same reasons, the Government cannot provide counsel indirectly through federal funding.[41]

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36. *Id.* at § 9607.
37. *Id.* at § 9620.
38. *Id.*
39. 28 C.F.R. § 50.15(b)(1).
40. *See* decision of the Comptroller General No. B–193636 (June 18, 1979) where the Comptroller General denied employees of the Securities and Exchange Commission private counsel at government expense.
41. *Id.* Moreover, the Comptroller has said that the basic character of the proceeding does not change simply because the employees were ultimately vindicated.

Shifting from the question of who pays legal fees to the area of what makes the federal employee substantively liable, we focus on the "responsible corporate officer" doctrine that will probably be of particular and personal concern to senior managers in the Government.[42] This doctrine involves the potential criminal liability of senior officials for the actions of subordinates. The seminal cases are *United States v. Park*[43] and *United States v. Dotterweich*.[44]

Park was a criminal prosecution against both the corporation and its Chief Executive Officer (CEO), Mr. Park, for violating section 301k of the Federal Food, Drug and Cosmetic Act (or Act).[45] The corporation, Acme Markets, was a large national chain having 36,000 employees, 874 retail outlets, and 12 warehouses. Rodents had contaminated food in one of the warehouses (a criminal violation of the statute). The corporation had been notified, but was unable to sanitize the situation completely. When the corporation pled guilty, the question concerning Mr. Park (the CEO) became what was the level of evidence needed to hold *him* criminally liable? The answer was, apparently, not much. The Court first found that liability could not be based solely on the basis of Mr. Park's position in the company. Liability could be found, however, where there was a finding that the CEO had a " 'position responsible to the situation' and 'by virtue of his position . . . had . . . authority and responsibility' to deal with the situation."[46]

Park involved the Food and Drug Act. The Court noted that statutes such as the Food and Drug Act "touch phases of the lives and health of people which, in the circumstances of modern industrialism, are largely beyond self protection."[47] The statute is of a "now familiar type" which "[d]ispenses with the conventional requirement of criminal conduct—awareness of some wrongdoing. In the interests of the larger good, it puts the burden of acting at hazard upon a person otherwise innocent but standing in responsible relation to a public danger."[48]

A corporate agent, through whose act or omission the corporation committed a crime, is himself guilty of a crime.[49] This principle applies regardless of whether the crime requires consciousness of wrongdoing, and it applies not only to corporate agents who themselves committed the criminal act, but also to those who by their managerial positions could be deemed responsible for the commission. The liability of these officers does not depend on their knowledge of or personal participation in the criminal act; rather, if the statute dispensed with consciousness of wrongdoing, then an omission or failure to act would be sufficient basis for criminal prosecution. Under *Park*, such a person is criminally accountable for failure to exercise the authority and supervisory responsibility vested in him by the corporate organization.[50] By imposing sanctions that reach those who execute the corporate mission, the Act places on those persons a duty to seek out and remedy those violations that occur.

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42. United States v. Frezzo Bros., Inc., 602 F.2d 1123, 1130 n.11 (3d Cir. 1979).
43. 421 U.S. 658 (1975).
44. 320 U.S. 277 (1943).
45. 21 U.S.C. § 331k.
46. 421 U.S. 674 (quoting from the trial court's instruction to the jury, which instruction the Court found sufficient).
47. 421 U.S. at 668, quoting from *Dotterweich*, 320 U.S. at 280.
48. 421 U.S. at 668.
49. *Id.* at 670.
50. *Id.* at 670–71.

More importantly, it imposes on senior management a duty to establish procedures that will prevent the violations from initially occurring.[51]

The policies underlying *Park* transfer readily to the environmental arena. Just as the Food and Drug Act, the environmental statutes touch phases of the lives and health of people which, in the circumstances of modern industrialism, are largely beyond self protection.[52]

There are two aspects to the individual liability question. First, does the specific statute reach the individual corporate officer? Second, what level of knowledge or individual involvement must the corporate officer have to be held criminally liable?

The law on the first aspect is relatively settled. The four environmental statutes that are the subject of this article toss out a net that reaches the individual corporate officer. For the purposes of criminal liability, the CWA defines "persons" to specifically include "any responsible corporate officer."[53] The CAA uses the same language.[54]

RCRA and CERCLA are only slightly less direct, Both impose criminal sanctions on "any person" performing the criminal acts. And since both specifically define "person" to include "individuals" as well as corporations,[55] the better reading is that these statutes also reach responsible corporate officers.

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51. *Id.* at 672.

52. 421 U.S. at 668.

53. 33 U.S.C. § 1319(c)(3). *See Personal Liability under the Environmental Statutes*, Memorandum to LTC Laurent R. Hourcle, USAF, from Maj. John L. Wittenborn, USAFR, (August 16, 1988) [hereinafter Wittenborn Memorandum]. A copy of this memorandum is on file in the office of USAF/JACE.

The courts have resolved the questions of corporate officer criminal liability under the CWA fairly quickly. One court rejected arguments that the individual corporate officer could not be held criminally liable in a footnote and without specific reference to the statutory language. United States v. Frezzo Bros., Inc., 602 F.2d 1123, 1129 n.10 (3d Cir. 1979), *cert. denied*, 444 U.S. 1074 (1979).

54. Section 113 (c)(3) of the CAA. 42 U.S.C. § 7413(c)(3).

Section 113(c) (42 U.S.C. § 7413(c)) contains the CAA's penalty provisions. As discussed *supra*, at note 9, the CAA uses a system of state implementation plans. Prohibited conduct includes knowingly violating a requirement of an applicable implementation plan (i) during a period of federally assumed enforcement or (ii) more than 30 days following notification that the person was in violation. 42 U.S.C. § 7413 (c)(1)(A).

The CAA also prohibits:

> violating, failing or refusing to comply with primary nonferrous smelter orders (under section 119 [42 U.S.C. § 7419];
>
> violating, failing or refusing to comply with compliance/final compliance orders under sections 113(a) and (d) [42 U.S.C. § 7413(a) and (d), respectively];
>
> violating section 111(e) standards of performance for new stationary sources [42 U.S.C. § 7411(e)];
>
> violating section 112(c) national emission standards for hazardous air pollutants [42 U.S.C. § 7412(c)].

For each violation, the CAA authorizes a fine not to exceed $25,000 for each day of violation and/or imprisonment not to exceed one year. A second conviction under the same section doubles the maximum sentence that can be imposed.

In addition the CAA creates a false statements offense. It makes criminal knowingly falsifying a statement, representation, or certification in an application, record, report, plan or other document filed or required to be maintained; or falsifying, tampering with or rendering inaccurate any monitoring device or method required to be maintained subjects a person to a fine of not more than $10,000 and/or six months imprisonment. 42 U.S.C. § 7413(c)(2).

55. 42 U.S.C. §§ 6903, 6928, 9601 and 9603. *See* Wittenborn Memorandum, *supra* note 53.

The courts have so held. An example is *United States v. Johnson & Towers, Inc.*,[56] a RCRA case.[57] The corporate defendant had conceded liability and the only issue was the potential criminal liability of the individual corporate employees. The court concluded that Congress chose in the definition section to define "person" broadly, and that there was no reason to read into the section imposing criminal sanctions a different and narrower definition of the term.[58]

The individual defendants also argued that because the CAA and the CWA specifically defined "person" to include "any responsible corporate officer" and RCRA did not, the statutory term "person" should be interpreted narrowly and should not reach corporate officers. The court rejected this argument. It chose to give the term "person" its "common-sense meaning" and it concluded that simply because Congress may have expanded the class of potential defendants in the CAA and CWA did not mean that it had narrowed the class in RCRA.[59]

Since the definitional issues are relatively settled, the debate centers on the second question: How much knowledge or involvement by the individual defendant is necessary to hold him criminally liable? In order to impose criminal liability on individuals, the environmental statutes generally require a knowing violation of the law.

The CAA is a good example. In addition to requiring "knowing" violations, it usually limits criminal liability to those who have already been warned to stop the offending behavior.[60] Similarly, section 3008 of RCRA makes criminally liable "any person" who "knowingly" or "in knowing violation" of any statutory or regulatory requirements transports, treats, stores, or disposes of hazardous waste.[61] CERCLA imposes criminal sanctions on "any person" who *knows* of an unpermitted release of a hazardous substance and who fails to report that release.[62] The CWA

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56. 741 F.2d 662 (3d Cir. 1984), *cert. denied*, 469 U.S. 1208 (1984).

57. *Johnson & Towers* also involved an alleged violation of the criminal provisions of the CWA. But perhaps reflecting the clear imposition of CWA criminal liability on "responsible corporate officers," there was no CWA issue at the appellate level. The dispute focused on the RCRA issues. 741 F.2d at 664, 665 n.3.

58. 741 F.2d at 665.

59. 741 F.2d at 665 n.3. The court suggested that the language in the CAA and CWA seems to expand the class of potential criminal defendants under those statutes. *Id.* But, as the court put it: "an exercise in draftsmanship intended to broaden the scope of a criminal provision 'can hardly be found ground for relieving from such liability the individual agents of the corporation.' " *Id.* quoting from *Dotterweich*, 320 U.S. 277, 282.

60. *See* Long, *Criminal Prosecution of Environmental Laws: Semi-White Collar Crime*, 31 F.B.A. FED. BAR NEWS & J. 266, 268 (1984).

61. 42 U.S.C. § 6928.

62. Section 103 of CERCLA: 42 U.S.C. § 9603. Section 103(a) imposes criminal penalties for failing to give notice of the release of a hazardous substance. It provides that any person in charge of a vessel or an onshore facility shall, as soon as he has knowledge of any release of a hazardous substance from that vessel or facility, in quantities greater than allowed by regulation, shall notify the CWA National Response Center (NRC). Section 103(b) [42 U.S.C. § 9603(b)] provides that any such person who fails to notify the NRC shall be subject to a fine of not more than $10,000 and/or to imprisonment not to exceed one year. The elements of an offense under this section are:

(1) the defendant was in charge of the vessel or facility;

(2) a hazardous substance was released from the vessel or facility;

(3) the release was not a federally permitted release;

(4) the material was released from a vessel into navigable waters (or from a vessel otherwise subject to federal jurisdiction) to a location which affects natural resources belonging to the United States;

also makes criminal "willful" violations and, in addition, it makes criminal certa "negligent" breaches of its provisions.[63] But, despite the statutory language, th courts in many cases, have applied *Park* type analyses to produce results tha while perhaps not actually reaching strict liability, come uncomfortably close t

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(5) the quantity of material released was greater than or equal to the reportable quantity;

(6) the defendant had knowledge of the release; and

(7) the defendant failed to notify the NRC immediately.

Section 103(c) imposes criminal misdemeanor penalties of up to $10,000 and/or one year imprisonment for knowingly failing to provide EPA with notice concerning a facility at which any hazardous waste is stored, treated, or disposed, unless the facility has a permit or has been accorded interim status under RCRA. 42 U.S.C. § 9603(c). The notice to EPA must advise EPA of the existence of the facility, the amount and type of material likely to be found there, and any known or likely releases. The elements of this offense are:

(1) the defendant had knowledge of the existence of a facility which accepts or has accepted hazardous waste for treatment, storage or disposal;

(2) the facility in question was not qualified for interim status or had not been granted a permit under Subtitle C of RCRA;

(3) the defendant was the owner or operator of the facility, or a transporter who selected the facility; and

(4) the defendant failed to notify EPA of the existence of the facility by June 9, 1981 (180 days after the effective date of CERCLA).

Section 103(d) authorizes EPA to establish recordkeeping requirements for the owner or operator of a facility which does not have interim status or a Subtitle C permit under RCRA, and for the transporters who select such facilities. 42 U.S.C. § 9603(d). The section then establishes misdemeanor penalties of not more than a $20,000 fine and/or imprisonment up to one year for knowing destruction or concealment of these records. The elements of the offense are:

(1) the defendant is either the owner or the operator of a facility which does not have interim status or a Subtitle C permit under RCRA, or the defendant is a transporter who selected such a facility;

(2) the defendant destroys, mutilates, erases, disposes of, conceals or otherwise renders unreadable records subject to regulation;

(3) 50 years, or some lesser period of time prescribed in a waiver, have not passed since the establishment of these records; and

(4) the defendant does so knowingly.

63. Section 309(c) of the CWA [33 U.S.C. § 1319]. *See* Wittenborn Memorandum, *supra* note 53. The CWA establishes a series of regulatory requirements. Section 309(c)(1) imposes criminal penalties for willful and negligent violations of several of these regulatory provisions. Specifically, it punishes those who willfully or negligently violate seven specified sections:

— Section 301: effluent limitations [33 U.S.C. § 1311];

— Section 302: water quality related effluent limitations [33 U.S.C. § 1312];

— Section 306: national standards of performance [33 U.S.C. § 1316];

— Section 307: toxic and pretreatment effluent standards [33 U.S.C. § 1317];

— Section 308: records and reports and inspections [33 U.S.C. § 1318];

— Section 318: aquaculture [33 U.S.C. § 1328]; and

— Section 405: disposal or use of sewage sludge [33 U.S.C. § 1345].

doing so. For example, section 3008 of RCRA imposes criminal liability on "any person" who "knowingly" or "in knowing violation" of the statutory or regulatory requirements transports, treats, stores or disposes of hazardous wastes.[64]

Congress did not provide detailed guidance on the meaning of the term "knowing" in this section. Indeed, it specifically said it had "not sought to define 'knowing' for offenses under subsection [d]; that process has been left to the courts under general principles."[65]

In addition, section 309 punishes willful or negligent violatin of any permit condition or limitation implementing any such sections in a permit issued under section 402 [33 U.S.C. § 1342] by the administrator or the state, or a permit issued under section 404 [33 U.S.C. § 1344]. Violations result in a fine ranging from $2,500 to $25,000 per day of violation, and/or imprisonment not to exceed one year. Should the conviction be for a second violation of the paragraph, the maximum punishments double. 33 U.S.C. § 1319. The CWA also creates a false statements offense. 33 U.S.C. § 1311(c)(2). Finally, section 311(b)(5) addresses oil spills. 33 U.S.C. § 1321(b)(5). It imposes criminal penalties for failure to notify the National Response Center (NRC) of a spill of oil or hazardous substance. The elements of a section 311(b)(5) offense are:

(1) the defendant was in charge of a vessel, onshore or offshore facility;

(2) oil or a hazardous substance in a reportable quantity was discharge from the vessel or facility;

(3) the defendant had knowledge of the discharge; and

(4) the defendant failed to notify the NRC or the appropriate government agency immediately on receiving knowledge of the spill.

33 U.S.C. § 1321(b)(5).

64. 42 U.S.C. § 6928. Section 3008 (d)(1) [42 U.S.C. § 6928] imposes criminal liability on those persons who knowingly transport or cause to be transported hazardous waste to a facility which does not have a permit under either RCRA or Title I of the Marine Protection, Research and Sanctuaries Act (MPRSA) [33 U.S.C. § 1411]. Punishment includes a fine of not more than $50,000 for each day of violation, or not more than five years imprisonment, or both. The elements of an offense under this section are:

(1) the materials were wastes identified or listed under RCRA;

(2) the defendant transported or caused to be transported these hazardous wastes to a facility that does not have a permit under either RCRA or under Title I of MPRSA;

(3) the defendant did so knowingly, *i.e.*, the defendant knew what the waste was, and knew that the disposal site had no permit.

Section 3008(d)(2) provides criminal sanctions for knowingly treating, storing, or disposing of hazardous wastes without a permit, for knowingly violating a material condition of a permit, or for knowingly violating a material condition or requirement of an applicable interim status standard or regulation. Punishment includes a fine of not more than $50,000 for each day of violation, or not more than five years imprisonment, or both. The elements of an offense under this section are:

(1) the materials were wastes identified or listed under RCRA;

(2) the defendant treated, stored, or disposed of the wastes, either without a permit under RCRA or MPRSA, or in violation of a material permit condition or requirement, or in violation of any material condition or requirement of an applicable standard or regulation; and

(3) the defendant did so knowingly.

For each criminal offense under section 3008(d), the statute provides up to twice the maximum punishment for repeat offenders.

RCRA's fundamental crimes of disposing of and treating and storing hazardous waste are felonies. In addition to these felony status offenses, RCRA imposes misdemeanor sanctions for certain lessor offenses. For example, subsection 3 of 42 U.S.C. § 6928 (d) creates a false statements offense, with violations subject to misdemeanor penalties.

65. S. REP. No. 172, 96th Cong., 2d Sess., 39 (1980), *reprinted in* 1980 U.S. CODE CONG. & ADMIN. NEWS 5019, 5038.

The process that Congress envisioned has, in fact, occurred and there is RCRA caselaw on the meaning of the term "knowing." An example is *United States v. Hayes International Corp.*[66] The *Hayes* court applied principles similar to those enunciated in *Park* and *Dotterweich*.[67]

The court's opinion provides a detailed discussion of the necessary elements of regulatory offenses, with particular focus on statutes where Congress had created an offense of "knowingly violating a regulation."[68] The *Hayes* court noted that the Supreme Court has had difficulty with such statutes, sometimes holding that knowledge of the regulation was not an element of the offense,[69] and sometimes holding that knowledge of the illegality was necessary.[70] The distinguishing factor between the two categories appears to be whether the statute involves a "type of conduct that a reasonable person should know is subject to stringent public regulation and may seriously threaten the community's health and safety."[71] As the Supreme Court said in *United States v. International Minerals & Chemical Corp.*, where "dangerous or obnoxious waste materials are involved, the probability of regulation is so great that anyone who is aware that he is in possession of them or dealing with them must be presumed to be aware of the regulations."[72]

Applying these standards, the court in *Hayes* concluded that ignorance of the permit requirement is not a defense. The court reasoned that the section did not make knowledge of illegality an element of the offense. Moreover, it concluded that section 3008 is undeniably a public welfare statute involving a heavily regulated area, with great ramifications for public health and safety. Accordingly, the court concluded that it was fair and reasonable to charge with knowledge of the regulatory provisions those who choose to operate in such areas.[73]

A second aspect of the "knowledge" question is whether the statute requires knowledge of the permit status of the facility to which the wastes were transported. As the court in *Hayes* noted, section 3008 and similar statutes are "linguistically ambiguous: it is impossible to tell how far down the sentence 'knowingly' travels."[74] Here, however, the congressional purpose indicates that knowledge of the permit status was required. The precise wrong Congress intended to combat was transportation to an unlicensed facility. The Court reasoned that not having "knowing" travel all the way down the sentence would make innocent conduct criminal, "for example, if the defendant reasonably believed that the site had a permit but was misled by the people at the site."[75] The *Hayes* court concluded that, to convict under section 3008, it was necessary to find that the defendant knew what the waste was

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66. 786 F.2d 1499 (11th Cir. 1986).
67. The *Hayes* court did cite *Dotterweich*. 786 F.2d at 1502.
68. *Id.* at 1502.
69. *Id.* at 1502, *citing* United States v. Internat'l Minerals & Chemical Corp., 402 U.S. 558 (1971) and Boyce Motor Lines v. United States, 342 U.S. 337 (1952).
70. 786 F.2d at 1502–03, *citing* Liparota v. United States, 471 U.S. 419 (1985).
71. 471 U.S. at 433.
72. 402 U.S. 558, 565 (1971). The *Internat'l Minerals* court was faced with ICC regulation of corrosive liquids. The court held that the *mens rea* requirement applied to the facts but not to the law. "A person thinking in good faith that he was shipping distilled water when in fact he was shipping some dangerous acid" would not be criminally liable. *Id.* at 563–64. But that same person would be presumed to be aware of the regulation. *Id.* at 565. The Supreme Court cited the earlier cases of *Balint* and *Freed*. United States v. Balint, 258 U.S. 250 (1921); United States v. Freed, 401 U.S. 601 (1971). In *Balint*, the court was dealing with hand grenades; in *Freed*, with drugs; and in *Internat'l Minerals*, with dangerous acids. The Court held that in such cases knowledge of the regulation can be presumed. *Id.* at 565.
73. 786 F.2d at 1503.
74. *Id.*
75. *Id.* at 1504.

(in this case a mixture of paint and solvent), and that the defendant knew that the disposal site had no permit. However, the court did say that the requisite knowledge can be inferred from all the circumstances, including the existence of the regulatory scheme, or evidence that someone was willing to take away the wastes at an exceptionally low price. Finally, the *Hayes* court said that a good faith belief that the hazardous waste is being recycled is a defense to a charge of unlawful transportation.

In *Johnson & Towers*, another RCRA case, the court of appeals used a similar analysis to find potential criminal liability. The district court had dismissed criminal courts charging two relatively low level employees with unpermitted disposal of hazardous wastes in violation of RCRA.[76] The court of appeals reversed, holding that section 3008 of RCRA[77] "covers employees as well as owners and operators of the facility who knowingly treat, store, or dispose of any hazardous waste, but that the employees can be subject to criminal prosecution only if they knew or should have known that there had been no compliance with the requirement of" section 3008.[78] But despite the court's statement about "knew or should have known," the case would offer little consolation to a corporate officer. Citing *Park*, *Dotterweich* and their progeny, the court concluded that RCRA was the same type of public health statute and that the RCRA knowledge requirement should be read in the same way.[79] The court concluded that the knowledge requirement can be met by "inferring knowledge on the part of those whose business it is to know, despite their protestations to the contrary."[80]

The *Johnson & Towers* court also applied the same analysis used by the *Hayes* court to the second part of the knowledge requirement. It concluded that although the Government did not have to prove knowledge of the statute forbidding the actions, it would have to prove that the defendants had knowledge of the actions taken.[81]

Frezzo Brothers produced a similar result in a criminal prosectution under the CWA.[82] As mentioned earlier, a criminal conviction of an individual defendant under the CWA would require willful or negligent conduct by a responsible officer.[83] The *Frezzo Brothers* court did find that the defendants were guilty of willful discharge of pollutants without a permit.[84] But the court's language suggests that willfulness would be fairly easy to find. The court concluded that it was not necessary to present direct evidence of each aspect of the offense and that the "jury was entitled to infer from the totality of the circumstances surrounding the discharges that a willful act precipitated them."[85] Those circumstances could include the fact that the defendants had previously been investigated and warned.[86] In effect, the *Frezzo Brothers* court applied a *Park* and *Dotterweich* "responsible corporate offi-

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76. RCRA imposes criminal liability on "owners and operators," *i.e.*, those who are obligated under the statute to obtain a permit. 42 U.S.C. § 6928(d). The employees were not "owners and operators." 741 F.2d at 664.

77. 42 U.S.C. § 6928(d).

78. 741 F.2d at 664–65.

79. 741 F.2d at 667.

80. 741 F.2d at 669–70, *quoting from* United States v. Internat'l Minerals and Chemicals, 402 U.S. 558, 563 (1971).

81. 741 F.2d at 669.

82. *Frezzo Brothers*, 602 F.2d, at 1123. *See* Wittenborn Memorandum, *supra* note 53. Major Wittenborn suggests that *Frezzo* and *Johnson & Towers* are examples of cases that have used evidentiary mechanisms to relax the scienter requirement of an environmental statute's criminal provision.

83. *See supra* note 63 and accompanying text.

84. 602 F.2d at 1129.

85. *Id.*

86. *Id.* at 1129 n.11.

cer doctrine'' to assert criminal liability on corporate officials absent the traditio requirements of actual knowledge or awareness. The *Frezzo Brothers* court's re ance on the ''responsible corporate officer doctrine'' is made clear by the cour express reference to *Park* and *Dotterweich*.[87]

The cases suggest that corporate officials in positions of authority stand in cle danger of being held personally liable for criminal violations of environment statutes.[88] The questions then become whether this doctrine can and will transfer the senior government official. The answers to these questions are that it most like can, and probably will.[89] The most obvious distinctions between senior governme and senior private sector officials do not appear to mandate different treatment.

First, the cases often have involved closely held corporations. In *Frezzo Brother* for example, the corporation was a family owned business with the two brother serving as principal corporate officers.[90] The Government is obviously not a closel held corporation. But the analysis that the courts used to impose personal crimina liability does not depend on the closely held nature of the corporate entity. Rather i depends on the nature of the conduct that Congress was prohibiting.

The second potential distinction stems from the fact that there was an employe corporation in *Park*, *Dotterweich* and all the other cases. That employer corporation was itself subject to criminal liability; a government employee's ''corporation,'' the United States, cannot be. Since *Park*-type analysis is premised in part on the reality that the only way a corporation can act is through individuals acting on its behalf,[91] perhaps it is arguable that if the employer, *i.e.*, since the United States cannot be subject to federal criminal liability, then an employee's individual liability must be based on knowledge of or personal participation in the criminal act. The program with this argument is that it seems to prove too much. It suggests that, since the Government cannot be guilty of the commission of a federal crime, neither can the employee. That conclusion is untenable.

The third possible distinction may be found in the *Aberdeen* case itself.[92] The Aberdeen indictment charged that the Army's own safety inspectors had issued notices of violation or had conducted safety surveys reporting the improper storage of excess chemicals and wastes.[93] The three employees appear to have had personal knowl-

87. *Id.* at 1130 n.11.

88. Congress, in enacting the environmental statutes, undoubtedly intended the criminal sanction to be broad enough to ensnare corporate officers (and, by analogy, military commanders) when they know of illegal conduct and do not act either to prevent the violation or to promptly correct it. Liability, however, does not necessarily depend on knowledge of, or personal participation in, the acts made criminal . . . . Corporate officers with supervisory responsibility have a positive duty to seek out and remedy violations which occur and to implement measures that will ensure that future violations will not occur. In this regard, the environmental statutes simply echo a long line of cases that have established that corporate officers have a legal duty to exercise vigilance and foresight.

Donnelly, *The Warrior and the Druid—the DOD and Environmental Law*, 33 F.B.A. FED. BAR NEWS & J. 343, 346 (1986).

89. *Id.*

90. 602 F.2d at 1125.

91. 421 U.S. at 668.

92. *See supra* notes 1–5 and accompanying text.

93. For a discussion of the Aberdeen indictment, *see supra* notes 1–3 and accompanying text. Indictment Count No. 1, para. 20, which was incorporated into Count Nos. 2, 3, and 5 reads:

> At all times pertinent to this indictment, CRDC [Chemical Research and Development Center] safety inspectors issued notices of violation to the Munitions Directorate reporting the improper storage of excess chemicals, incompatible storage of chemicals, storage of unknown wastes, and the failure to turn in wastes generated at the Pilot Plant complex.

edge of the RCRA violations.[94] But this may only mean that the federal prosecutor will, in his discretion, look for more evidence before bringing the federal indictment.[95] That will not help the senior employee if the prosecutor in his case exercises that discretion differently.

In sum, given the potential transferability of *Park*, *Dotterweich*, and their progeny to the federal arena, the wise and well-advised commanders and senior officials should be aware of these cases. The rationale of these cases arguably imposes a duty on commanders and senior officials who execute the agency or corporate mission, *i.e.*, the duty to seek out and remedy violations that occur, and to establish procedures that will prevent the violations from occurring initially.[96] And it appears that this duty may be enforced by criminal sanctions.

State Criminal Prosecution. Here the rule is more favorable to the Federal employee, but also more complex. By the Supremacy Clause, federal employees are immune from state criminal process and proceedings if the actions giving rise to the state criminal prosecution were necessary and proper to carry out federal responsibilities.

The seminal case is the 1890 case of *In re Neagle*.[97] There the Supreme Court held that, by reason of the Supremacy Clause, a federal officer cannot be held on a state criminal charge when the alleged crime arose during the performance of the officer's federal duties. The Court reasoned:

> If the prisoner is held in the state court to answer for an act which he was authorized to do by the law of the United States, which it was his duty to do as [an officer] of the United States, and if in doing that act he did no more than was necessary and proper for him to do, he cannot be guilty of a crime under the laws of the State of California.[98]

On paper, the protection for the federal officer is fairly broad. Errors of judgment in what the federal officer perceives to be his legal duty will not by themselves serve to create state criminal responsibility.[99] To avoid state criminal liability, the federal officer need only demonstrate "that he had an honest and reasonable belief that what he did was necessary for the performance of his duty."[100]

But in a practical sense, the protection may be more limited. This is because immunity is accomplished by affording the officer habeas corpus relief, which, the courts have held, should be exercised sparingly.[101] As the Supreme Court observed

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Count 4, para. 5, reads: "At all times pertinent to this indictment, safety surveys were conducted at the Old Pilot Plant area and numerous chemicals were identified as improperly stored and representing a potential hazard."

In addition, there was testimony in the trial that the three employees were told that they had a responsibility to comply with waste disposal rules. Baltimore Sun, Jan. 13, 1989, at 4D.

94. *Id.*

95. Donnelly, *supra* note 88, discusses the competing considerations that a prosecutor faces in exercising that discretion. They suggest that a "prosecutor looking for broad deterrent impact would rather bring an action against those officers under whose responsibility a violation has taken place, not just those subordinates directly involved."

96. *Id.*

97. 135 U.S. 1 (1890). *In re Neagle* is the first of a long line of cases involving federal law enforcement officials who shoot or otherwise injure someone and who are charged under state criminal law. *See, e.g.*, Drury v. Lewis, 200 U.S. 1 (1906); Birsch v. Tumbleson, 31 F.2d 811 (4th Cir. 1929); Clifton v. Cox, 549 F.2d 722 (9th Cir. 1977).

98. 135 U.S. at 75.

99. Morgan v. California, 743 F.2d 728, 731 (9th Cir. 1984); *Clifton*, 549 F.2d 722 at 727.

100. *See Morgan*, 743 F.2d at 731, quoting both *Clifton*, 549 F.2d at 727 and *In re* McShane, 235 F. Supp. 262, 274 (N.D. Miss. 1964).

101. 743 F.2d at 731.

early, federal courts are not "imperatively require[d]" to wrest [federal officers] from the custody of state officers in advance of trial in the state courts" and the "courts may decline to discharge in the proper exercise of discretion."[102]

The result is a fairly limited intervention in the state criminal process. The federal courts will intervene in the state criminal prosecution if (1) in viewing the evidence in the light most favorable to the state, it still appears that the federal officers were acting within the scope of their federal authority and their actions were necessary and proper to carry out that authority, or (2) it is shown that the state criminal prosecution is intended to frustrate federal law enforcement.[103] One result of this limited intervention in the state criminal process is that the federal courts will probably allow the state court prosecution to continue in order to develop an evidentiary record on whether the criteria for intervention have been met.[104] For the federal employee, the result may be immunity from conviction but not necessarily from the burden of the trial. But in a *state* as opposed to a federal criminal proceeding, representation from the Department of Justice may be available—particularly where the Supremacy Clause of the Constitution is a defense.[105]

The rule then is that federal immunity, under the Supremacy Clause, will shield a federal agent from state prosecution *ONLY* when his acts are both (1) authorized by the laws of the United States, and (2) necessary and proper to the execution of his responsibilities.[106]

B. CIVIL LIABILITY

Before turning to the specific question of the civil liability of the federal employee, a brief discussion of the general concepts concerning individual civil liability may be helpful.

As discussed above, the criminal liability provisions of the environmental statutes include a scienter or knowledge requirement.[107] In contrast, the civil liability provisions of these same statutes do not include this knowledge requirement. On the civil side, strict liability is the standard and no showing of intent is required.[108]

But there is a similarity between the civil and criminal provisions. The civil provisions reach "persons" and "owners & operators" and, like their criminal counterparts, rely on statutory language that includes individuals within the scope of these terms.[109]

For example, RCRA imposes civil liability on "any person contributing to" the disposal of hazardous waste that constitutes an endangerment to the environment or

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102. *Drury*, 200 U.S. 1, 8.

103. 743 F.2d at 733.

104. 743 F.2d at 731.

105. *See* Farley, *The Representation and Defense of the Federal Employee by the Department of Justice* at 4, (February 1988). Representation is provided "in order to protect the *interest of the Government*, not the interest of the employee. The Justice Department clearly has no obligation to a particular employee, . . ." Ryan v. United States, 227 Ct. Cl. 711, 713–14 (1981) (emphasis in original). In cases where the Supremacy Clause of the Constitution is a defense, it seems clear that the interests of the Government are advanced by raising that defense.

106. 743 F.2d at 731.

107. *See supra* notes 60–65 and accompanying text. *See also* Wittenborn Memorandum, *supra* note 53.

108. 33 U.S.C. § 1321 (CWA); 42 U.S.C. §§ 6928, 6973 (RCRA); 42 U.S.C. § 9607 (CERCLA). *See* United States v. Northeastern Pharmaceutical & Chemical Co., 579 F. Supp. 823, 844 (W.D. Mo. 1984) (NEPACCO I), *aff'd*, United States v. Northeastern Pharmaceutical & Chemical Co., 810 F.2d 726, 734 (8th Cir. 1986) (NEPACCO II). NEPACCO I spoke of strict liability under the CWA and CERCLA; NEPACCO II under RCRA. *See also* Wittenborn Memorandum, *supra* note 53.

109. *See* Wittenborn Memorandum, *supra* note 53.

any "person" violating any requirement of the act.[110] the CWA imposes liability on "any person" violating its provisions[111] and holds "owners, operators, and persons in charge" liable for releases of oil or hazardous substances.[112] Finally, CERCLA imposes liability on past and present "owners and operators" of facilities that require clean up costs and on "any person" transporting or arranging for transport or disposal of a hazardous substance requiring cleanup costs.[113]

The leading cases on individual civil liability are the two *NEPACCO* decisions, *NEPACCO I* and *NEPACCO II*.[114] The *NEPACCO* defendants were the closely held corporation itself and the corporation's president and vice president, who were both major stockholders.[115] The courts held both individual defendants personally liable, even though strictly speaking the corporation was the owner and the entity that disposed of the hazardous substances.[116]

In holding the corporate officers personally liable, the *NEPACCO* courts established a control test.[117] For example, under CERCLA, "[i]t is the authority to control the handling and disposal of the hazardous substance that is critical under the statutory scheme."[118] Under RCRA, a similar analysis would apply.[119] The defendants can be "held individually liable if they were personally involved in or directly responsible for corporate acts in violation of RCRA."[120]

But the *NEPACCO* court approached the liability of the two individual defendants, *i.e.*, the corporate president and the vice president, in two slightly different ways. The two approaches point out the dual principles upon which liability can be based. The vice president had been personally involved in the conduct that violated both CERCLA and RCRA. In discussing his liability, the Court of Appeals said that the liability imposed upon him was not derivative, but personal. Liability was not premised solely upon his status as a corporate officer or employee. Rather, he was individually liable because he personally arranged for the transportation and disposal

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110. 42 U.S.C. §§ 6928, 6973.
111. 33 U.S.C. § 1319.
112. 33 U.S.C. § 1321.
113. 42 U.S.C. § 9607. In the words of one court, CERCLA's statutory language defining the term person "includes both individuals and corporations and does not exclude corporate officers and employees." *Northeastern Pharmaceutical & Chemical Co.*, 810 F.2d 726, 743 (8th Cir. 1986) (NEPACCO II).
114. *Northeastern Pharmaceutical & Chemical Co.*, 579 F. Supp. 823, 844 (W.D. Mo. 1984) (NEPACCO I), *aff'd*, *Northeastern Pharmaceutical & Chemical Co* , 810 F.2d 726, 734 (8th Cir. 1986) (NEPACCO II). *See* Wittenborn Memorandum, *supra* note 53.
115. 579 F. Supp. at 827–28, 848.
116. As the NEPACCO I court noted, Congress had defined owner and operator under CERCLA to specifically exclude from liability those persons who "without participating in the management . . . . [hold] indicia of ownership." 549 F. Supp., at 849. *See* 42 U.S.C. § 9601 (20)(A). Interpreting this language, the district court reasoned that "the statute literally reads that a person who owns interest in a facility and is actively participating in its management can be held liable for the disposal of hazardous waste." 579 F. Supp. at 848.

The court concluded that this construction is supported by the intent of Congress. CERCLA promotes the timely cleanup of inactive hazardous waste sites. It was designed to ensure, as far as possible, that the parties responsible for the creation of the hazardous waste sites be responsible for cleaning them up. *Id.*

The congressional intent behind RCRA is similar. In discussing the individual liability question under RCRA, the Court of Appeals in NEPACCO II observed that imposing liability upon only the corporation but not upon those who actually make corporate decisions would be inconsistent with the congressional intent to impose liability upon the persons who were involved in the handling and disposal of hazardous substances. 810 F.2d at 745.
117. Wittenborn Memorandum, *supra* note 53.
118. 810 F.2d at 743.
119. *Id.* at 745.
120. *Id.*

of the hazardous substances on behalf of NEPACCO and thus actively participated in NEPACCO's violations.[121] The Court of Appeals referred to the concept of tortious liability of corporate officers. Corporate officers are individually liable for the torts they personally commit on behalf of the corporation and they cannot hide behind the shield of the corporation when they are active participants in the tort.[122]

The liability of the corporate president was based on a different theory. He had not been personally involved in the RCRA violations. His liability rested on his position as president and major stockholder. The court described the corporate president as "the individual in charge of and directly responsible for all of [the corporation's] actions" and as the individual with "the ultimate authority to control the disposal" of the hazardous substances.[123] The court imposed liability on the president despite a lack of personal involvement.[124] The test for the corporate president was one of responsibility and ability to control rather than actual control.

The *NEPACCO* cases set forth two principles for imposition of personal liability.[125] Personal liability will either be based on (1) whether the corporate officer was an owner/operator or contributor and therefore liable under the statute because of his authority to control the conduct that gave rise to the liability; or (2) it will stem from the corporate officer's personal involvement in the actions in question. The courts which have considered the issue since *NEPACCO* have relied on both tenets to impose liability.[126] But in many cases, the corporations are closely held and the two theories are intertwined and act as mutual and alternative bases for liability. Often the individuals in a position of control or responsibility, *i.e.*, the corporate presidents, vice presidents, and major owners, have also personally participated in the actions that constitute the statutory violations. So actual involvement acts as one of the indicia of control or authority and also serves to connect the individual with the specific violations.[127]

For example, *New York v. Shore Realty Corp.*[128] relied on both theories to hold an officer shareholder of a disposal site personally liable. After finding the individual defendant to be both an owner and an operator under CERCLA, the court added that it need not address whether the officer is liable merely as an officer because there was no dispute that the defendant "specifically directs, sanctions, and actively participates" in the violations.[129] Similarly, *United States v. Conservation Chemical Co.*[130] concluded that the individual defendant's involvement in the treatment plant as its founder, chief executive officer, and majority stockholder was sufficient to warrant imposing personal liability. The court further cited the "high degree of personal involvement in the corporation and decisionmaking process."[131]

The more recent cases have continued the trend. *United States v. Northernaire Plating Co.*[132] held the owner and sole shareholder personally liable, reasoning that

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121. 810 F.2d at 744 discussing liability under CERCLA. *See also id.* at 745 discussing liability under RCRA. The district court had found that the vice president was liable since, by virtue of his position, he had the capacity and general responsibility to control the disposal of hazardous wastes. 579 F. Supp. at 879. The Court of Appeals did not reach the validity of this conclusion because it found that the vice president had personally participated in the conduct. 810 F.2d at 744.
122. 810 F.2d at 744 *citing* Donasco, Inc. v. Casper Corp., 587 F.602, 606 (3d Cir. 1978).
123. 810 F.2d at 845.
124. *Id.*
125. Wittenborn Memorandum, *supra* note 53.
126. *Id.*
127. *Id.*
128. 759 F.2d 1032 (2d Cir. 1985).
129. *Id.* at 1052.
130. 628 F. Supp. 391 (D.C. Mo. 1985).
131. *Id.* at 420.
132. 670 F. Supp. 742 (W.D. Mich. 1987).

the corporate officer who has responsibility for arranging for the disposal of hazardous waste is personally liable under CERCLA.[133] A final example of this trend is *United States v. Bliss*,[134] a case involving the *NEPACCO* defendants. Citing the *NEPACCO II* holding that liability is based on ability to control disposal activities, the *Bliss* court found the two individual defendants liable because, as plant supervisor and as chief executive officer, both "had ultimate authority for decisions regarding disposal."[135] But the *Bliss* court added that the defendants had also actually exercised that authority through their individual acts.[136]

With this background, the discussion turns from the general concepts of individual civil liability to the specific question of the civil liability of the federal employee. Obviously the question is not whether individuals can be held personally liable; they can be. Rather the question becomes whether there is some immunity for federal employees. The same concepts discussed above regarding state criminal liability of federal employees have been applied in examining the question of civil liabilities of federal officials.[137]

In general, a federal official cannot be held personally liable in a civil suit for discretionary actions committed within the outer perimeter of his line of duty.[138] "To be within the outer perimeter . . . '[I]t is only necessary that the action bear some reasonable relation to and connection with duties and responsibilities of the officials.' "[139]

Moving from the general rule to the specific statutes, the CAA, the CWA, and RCRA each address the individual liability of the federal employee in the same statutory section in which they discuss sovereign immunity. And, at least with regard to RCRA, one court has suggested that a federal employee's civil liability is coextensive with the agency's sovereign immunity. *Meyer v. United States Coast Guard* was a state action under RCRA against the Coast Guard and its commandant, Admiral Gracey, both individually and in his command capacity. In dismissing the action, the court held that RCRA section 6001 did not waive sovereign immunity for penalties. The court found no reason to resolve the issue of Admiral Gracey's liability, stating that its resolution of the sovereign immunity issue "negate[d] the need for [it] to consider the propriety of listing Admiral Gracey as a defendant."[140]

Since the issues of sovereign immunity and personal liability are addressed in the same statutory sections, "requirements"—the term of art discussed earlier in the context of sovereign immunity—is also significant in the personal liability context.[141] The statutes are not completely consistent on this issue. The CAA and CWA take one path and RCRA takes another.

Both section 118 of the CAA and section 313 of the CWA read, "[t]he Federal Government . . . *and each officer . . . or employee thereof* shall be subject to all state . . . and local requirements . . . ."[142]

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133. *Id.* at 747.
134. 667 F. Supp. 1298 (E.D. Mo. 1987).
135. *Id.* at 1306.
136. *Id.*
137. 549 F.2d at 727. *See supra* notes 97–106 and accompanying text.
138. Westfall v. Erwin, _____U.S. _____, 108 S.Ct. 580, 584 (1988); Harlow v. Fitzgerald, 457 U.S. 800, 815–19 (1982); Scheuer v. Rhodes, 416 U.S. 232 (1974); Barr v. Matteo, 360 U.S. 564 (1959).
139. Scherer v. Morrow, 401 F.2d 204, 205 (7th Cir. 1968), *cert. denied*, 393 U.S. 1084 (1969), *quoting* from Scherer v. Brennan, 379 F.2d 609, 611 (7th Cir. 1967), *cert. denied*, 389 U.S. 1021 (1967).
140. Meyer v. United States Coast Guard, 644 F. Supp. 221, 223 (E.D.N.C. 1986).
141. *See supra* note 26 and accompanying text.
142. 42 U.S.C. § 7418 (emphasis added) (CAA); 33 U.S.C. § 1323 (emphasis added) (CWA).

In contrast, section 6001 of RCRA is silent on the obligation of the federal employee with regard to "requirements." Section 6001 reads, "[T]he Federal Government . . . shall be subject to . . . state . . . and local requirements . . . ."[143]

Shifting from "requirements" to "penalties,"[144] all three statutes address the question of whether the federal employee is personally liable for penalties.

Section 118 of the CAA provides that no federal employee shall be "personally liable for any civil penalty for which he is not otherwise liable."[145] This is probably the broadest protection for the federal employee.[146] Its breadth becomes clearer when this language is contrasted with the companion provision in the CWA, section 113. The CWA provision says that no federal employee shall be "personally liable for any civil penalty *arising from the performance of his official duties* for which he is not otherwise liable."[147] The limiting language "arising from the performance of his official duties" in the CWA version indicates that the protection from civil penalties in the CAA is broader. One article has suggested that the CAA immunity from personal liability is broader than the traditional federal common law of qualified immunity for official acts.[148] The same article suggests that, consistent with this analysis, "otherwise liable" can only refer to liability arising from acts or omissions totally unrelated to the employee's federal service.[149]

The legislative history suggests that the CAA's immunity from penalties should be read broadly. Congress had before it proposed legislation that would have held federal employees personally liable for civil penalties, but it rejected that proposal and adopted the provision containing immunity from penalties.[150] In addition, the legislative history of the CAA expressly declares that this section means that "any officer, employee or agent" of the U.S. Government may not be held personally liable for civil penalties.[151]

Section 313 of the CWA is a little different from its CAA counterpart. Section 313 states that "no officer, agent or employee of the United States shall be personally liable for any civil penalty arising from the performance of his official duties, for which he is not otherwise liable."[152] As noted above, this protection appears narrower than that provided under the CAA.[153]

How much narrower is unclear. The legislative history offers no guidance on interpreting this phrase. It has been suggested that the "arising under" clause may have been intended to encapsulate the federal common law concept of qualified immunity for official acts.[154] The test seems to be that the "federal official's conduct—whether an act or omission—must have been both within the scope of that official's authority and reasonable, as measured by reference to clearly established law."[155] If the official's responsibilities are clearly delineated in the statutes or

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143. 42 U.S.C. § 6961.
144. *See supra* notes 22–28 and accompanying text.
145. *Id.*
146. This provision seems to "slam the door on federal, state, and local authorities who would seek civil penalties, in any form" from government employees and officials. Donnelly, *supra* note 88.
147. 33 U.S.C. § 1323 (emphasis added).
148. Donnelly, *supra* note 88.
149. *Id.*
150. 1977 U.S. CODE CONG. & ADMIN. NEWS, Stat. 1502, 1517–18.
151. *Id.* at 1279.
151. *Id.* at 1279.
152. 33 U.S.C. § 1323.
153. *See supra* notes 109–10 and accompanying text.
154. Donnelly, *supra* note 88 at 345–46. For a discussion of qualified or "good faith" immunity, *see* Harlow v. Fitzgerald, 457 U.S. 800, 815–19 (1982).
155. Donnelly, *supra* note 88 at 345–46.

regulations, immunity from civil penalties will be unavailable "because a reasonably competent public figure will be presumed to have known the law governing his conduct."[156] If there is a "silver lining" in this cloud of potential liability under the CWA, it rests with the right to remove to federal district court a state suit arising from conduct in the performance of official duties.[157] The CAA offers no corresponding right.

Again, RCRA takes a slightly different tack. Neither section 6001 nor section 9007[158] contains a provision analogous to those in the CAA and CWA specifically exempting federal officials from personal liability for civil or administrative penalties.[159] Rather, both contain the following language: "Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State of Federal court with respect to the enforcement of any such injunctive relief."[160]

There are two interpretations of the RCRA language. On one hand, it has been suggested that the absence of a provision in RCRA specifically exempting the federal employee from fines and penalties means that, as far as the statute is concerned, the federal official is subject to civil penalties to the same extent as any nongovernmental actor.[161]

On the other hand, an argument can be made that this language subjects the federal employee to only those penalties to which the employee's employer—the Federal Government—is subject.[162] The RCRA language speaks only of injunctive relief—and not expressly of administrative fines or other relief. In the words of the court in *Meyer v. United States Coast Guard*, this section "does not clearly and unambiguously state that the Federal Government will be subject to fines and other penalties" imposed by states and local governments.[163]

So, if the federal employee is subject to only those fines and penalties to which the federal employer is subject, then section 6001 would subject the federal employee only to sanctions for the enforcement of injunctive relief.[164] As the court in *McClellan Ecological Seepage Situation (MESS) v. Weinberger* put it, the language "requires a preexisting order of the court to be enforced—no more, no less."[165]

In practice, however, the difference between the two approaches may not be very significant. Under federal common law, government officials performing discretionary functions are generally shielded from liability for civil damages insofar as their conduct does not violate clearly established statutory or constitutional rights of

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156. *Id.* at 346. *See Harlow*, 457 U.S. 800, 815–19 (1982). In other words, "while the CWA's immunity provision should be read broadly enough to protect the conscientious federal official, it will not provide much comfort for those who have not studied the regulatory requirements and made a good faith effort to meet them." Donnelly, *supra* note 88 at 346.

157. 42 U.S.C. § 7418(a).

158. 42 U.S.C. §§ 6961 and 6991f, respectively. The latter section applies to underground storage tanks.

159. Donnelly, *supra* note 88 at 346.

160. 42 U.S.C. § 6961 and 6991f.

161. Donnelly, *supra* note 88 at 346.

162. *See Meyer*, 644 F. Supp. 221, 223 (E.D.N.C. 1986).

163. 644 F. Supp. at 222. The court is speaking only of waiver with regard to the Federal Government and not the federal employee. But its analysis seems to readily transfer to the employee. Indeed, it is the *Meyer* court which suggests that the federal employee's liability is coextensive with that of the Government. *Id.* at 223. *See supra* note 140 and accompanying text.

164. *See* 644 F. Supp. at 221.

165. McClellan Ecological Seepage Situation (MESS) v. Weinberger, 655 F. Supp. 601, 603 (E.D. Cal. 1986).

which a reasonable person would have known.[166] This common law qualified immunity seems similar to that provided by the statutory language in the CWA.[167]

On the subject of civil penalties for the individual employee, three conclusions can be drawn (1) the Government employee may be immune; (2) immunity probably depends on the employee conscientiously attempting to comply with the statutes and (3) the law is unsettled enough so that no warranties can be given. The wise and well-advised senior government officials will treat this issue the same way that they will treat the criminal liability issue. In other words, the officials should conscientiously seek to understand and comply with the obligations imposed by the various statutes.[168]

III. CONCLUSION

Personal environmental liability is in many ways not fundamentally different from the other areas in which a federal employee can be subject to personal liability. Its most significant difference is that it is relatively new. If only for that reason, personal environmental liability creates new questions. These new obligations and the attendant potential liability have created a type of transition period. Government employees are still learning what their new responsibilities—and risks—are. And government lawyers have the obligation to educate their fellow employees about these new responsibilities and the potential liability that exists. With that education and the increased sensitivity that should accompany it, government employees may eventually treat liability for environmental misconduct just as they treat potential liability for filing false travel vouchers. They will be aware of the risks, and in the overwhelming majority of cases the misconduct will not occur at all. With that education and sensitivity, the issue will become less troublesome.

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166. 457 U.S. 800, 818 (1982) *citing* Procunier v. Navarette, 434 U.S. 555 (1978) and Wood v. Strickland, 420 U.S. 308, 322 (1975).

167. 457 U.S. at 818–19. *See also* Donnelly, *supra* note 88 at 345–46.

168. In the words of one article: "three things about individual liability should be understood. First, it exists. Second, states are discovering it. And third, only a conscientious attempt to understand and meet the obligations imposed by the various statutes will allow a defendant into the safe harbor offered by the common law qualified immunity for official acts." Donnelly, *supra* note 88 at 346.

Regulation of Radiation and Radioactive Materials

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I. INTRODUCTION

The principal reason this article will be read is curiosity. To most attorneys, the factual and legal issues of radiation protection or nuclear energy are as remote as an expedition to the jungles of the Congo or Amazon basin. Before leading the reader on an expedition through a subatomic jungle, it is proper to provide a basic road map and an explanation as to why the reader may wish to make the journey.

The legal issues relating to radiation protection and radioactive materials have a very strong connection to the underlying scientific phenomena, both in terms of the regulatory issues and in terms of other statutes and issues that have radiation-related components. Understanding some of the basic science is critical even to a general grasp of the legal issues, and that is where this article will begin. It will continue with a history and overview of the regulation of nuclear energy and radioactive materials in the United States, followed by some aspects of licensing as they apply in the Air Force. Next, it will explore areas of overlap with other issues such as the National Environmental Policy Act of 1969 (NEPA)[1] and the implementation of legally applicable or relevant and appropriate requirements (ARAR's) under the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendment and Reauthorization Act of 1980 (CERCLA/SARA).[2] This article will conclude by illustrating some of the legal difficulties an organization can face in dealing with radioactive materials.

However, this article is not intended to give the general practitioner enough information to resolve complex issues of radiation practice. Rather, the scope should be sufficient to assist in identifying the client's legal interests in radioactive materials applications, identifying potential problems, and seeking timely assistance. If the reader finds that the subject piques his curiosity, that will be an added bonus.

II. RADIATION, RADIOACTIVE MATERIALS, AND THEIR EFFECTS

The legal issues associated with radiation and radioactive materials are intimately involved with the underlying physics of matter and energy. Matter is generally thought to be composed of atoms.[3] Originally believed to be indivisible, atoms are now known to be composed of fundamental particles such as the proton, neutron,

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1. 42 U.S.C. § 4321–61.
2. 42 U.S.C. §§ 9601–57.
3. As early as 430 BC, the Greek philosopher, Democritus, proposed that matter could be divided and subdivided only until it was reduced to fundamental particles which he called *atomos*, or indivisible. Although this early philosophical work was not pursued scientifically, it was part of the basis of Robert Boyle's (1627–1691) work THE SCEPTICAL CHYMIST (1661) which set the stage for many of our modern ideas about atoms, elements, and chemistry. *See* I. ASIMOV, UNDERSTANDING PHYSICS: THE ELECTRON, PROTON, AND NEUTRON, 2–7 (1966).

and electron.[4] Although not germane to this discussion, even these particles are now thought to be composed of more fundamental particles. Atoms consist of a nucleus surrounded by one or more shells of orbiting electrons.[5] The nucleus consists principally of one or more protons along with, in most cases, one or more neutrons.[6] Atoms in which the nucleus contains an equal number of electrons and protons are electrically neutral, while atoms with an imbalance in the number of electrons and protons have an electrical charge and are called ions.[7]

The fundamentally common feature of each chemical element is its atomic number.[8] However, each element may have several specific forms, called isotopes, which have the same atomic number, but a different atomic weight.[9] Different isotopes of the same element have the same chemical properties, but different physical properties.[10] Usually, the most interesting property of an artificially produced isotope is its radioactivity. During the process of refining our view of the atom to allow for still smaller subatomic particles, it became apparent that some atoms are unstable, that is, their nuclei will spontaneously emit a particle or electromagnetic radiation and transmute themselves into a different material. A material that spontaneously emits particles or electromagnetic radiation is said to be "radioactive."[11] This phenomenon was critical to the discovery of subatomic particles.

Most matter is essentially stable. Radioactive matter disintegrates spontaneously at a rate that is characteristic of the particular matter. Most disintegrations emit either a free electron (a beta particle) or a particle consisting of two protons and two

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4. The electron is the fundamental particle of negative electrical charge. It has a charge of -1 and a mass of 9.1091×10^{-28} grams (1/1836 of the mass of a proton or neutron). The proton is the fundamental particle of positive charge. It has a charge of $+1$ and a mass equivalent to that of 1836 electrons. The proton is generally described as having a mass of approximately one atomic mass unit. The neutron is a neutral particle having approximately the mass of a proton and no charge. The nucleus of the simplest form of hydrogen is a single proton, while protons and neutrons combine to form the nuclei of more complex atoms. *See* ASIMOV, *supra* note 3 at 36–54, 112–13, 118.

5. Earnest Rutherford discovered, in experiments beginning in 1906, that the atom consisted principally of empty space interspersed with very small, highly dense atomic nuclei. Neils Bohr, while developing a model of the hydrogen atom that was consistent with observed data, developed the model of the atom generally used today for visualization of atomic structure. The Bohr atom is similar to a solar system, consisting of a small dense nucleus at the center and shells of electrons in specific orbits around the nucleus. *See* ASIMOV, *supra* note 3, at 53–89. *See also* J. GRIBBIN, IN SEARCH OF SCHROEDINGER'S CAT: QUANTUM PHYSICS AND REALITY, 70–78 (1984).

6. The most basic form (or isotope) of hydrogen consists of a single proton in the nucleus and a single electron in the electron shell. *See* E. POCHIN, NUCLEAR RADIATION: RISKS AND BENEFITS, 6 (1983).

7. *See* ASIMOV, *supra* note 3, at 57.

8. An element is a chemical substance that cannot be broken down further without changing its atomic structure. Elements are the building blocks of chemical compounds. *See* ASIMOV, *supra* note 1, at 4–13. Atomic number, the number of protons in the nucleus, is the characteristic that uniquely defines each element. *See* GRIBBIN, *supra* note 5, at 69 and ASIMOV, *supra* note 3, at 63–70.

9. Isotopes are identified by element, atomic weight, and occasionally atomic number; that is, the element carbon has the symbol C, atomic number 6 (reflecting 6 protons and 6 electrons), and the most common isotope has atomic weight 12; the usual means of identifying this isotope symbolically are ${}_6C^{12}$, simply C^{12}, or C–12.

10. *E.g.*, deuterium, the second isotope of hydrogen, has an atomic number of 1 and an atomic weight of 2. It is variously symbolized as ${}_1H^2$, H^2, or H–2. Deuterium has the same chemical properties as ordinary hydrogen (or ${}_1H^1$) but weighs twice as much. If a gallon of water had been made with normal oxygen (0^{16} or O–16) and with deuterium (H^2) instead of ordinary hydrogen (H^1), it would be about 11% denser than ordinary water. Many elements have more than one naturally occurring isotope and many isotopes are produced artificially.

11. The first documented report of naturally occurring radioactivity is attributed to Henri Becquerel in 1896. He discovered that uranium salts would expose an enclosed photographic plate. *See, e.g.*, ASIMOV, *supra* note 3, at 108–10, GRIBBIN, *supra* note 5, at 28–29, and J. TURNER, ATOMS, RADIATION, AND RADIATION PROTECTION, 2 (1986).

neutrons (an alpha particle—equivalent to a helium atom that has been stripped of its electrons) along with a characteristic amount of electromagnetic radiation (a gamma ray). The rate of disintegration is often described in terms of half-life (the amount of time needed for half of the original material to decay to some other material.[12] Complicating the pattern of radioactive disintegration is the fact that the resultant isotope may also be radioactive. For example, Radium (Ra–226) decays into Radon (Rn–222) which is itself radioactive. The radioactive decay of a particular isotope is specific. That is, it occurs at a specific half-life, consists of the emission of a specific particle (or particles) at a specific energy, and exhibits specific electromagnetic radiation.

Radiation is the term generically applied to an emission of energy, either in the form of electromagnetic waves or particles.[13] Radiation which is sufficiently energetic to strip one or more electrons from neutral atoms and thus create ions is called "ionizing radiation." Less energetic radiation, such as visible light, radar and microwave radiation, or radio waves, are "nonionizing radiation." This article will deal only with ionizing radiation and radioactive materials. Although the use or misuse of nonionizing radiation also has environmental and health implications, these problems are significantly different from those that relate to ionizing radiation. Because of the differences, it is more appropriate to deal with each separately. In the particle category of ionizing radiation, one generally finds alpha particles, beta particles, and, occasionally, neutrons or other particles. Electromagnetic ionizing radiation consists of gamma radiation and X-rays (See Table 1, page 84).

The health effects of ionizing radiation stem from two principle sources. First, as described by Roentgen in 1895 when he discovered X-rays,[14] ionizing radiation penetrates matter. The degree of penetration varies based upon the specific form of the radiation, its energy, and the material being penetrated. (See Table 1, Page 84). Second, as the radiation penetrates the material in question, its energy is absorbed by that material. Thus, depending on the radiation and the absorbent material, the irradiation of a material results in that material's absorption of some amount of energy within itself.

The effect of this energy absorption varies, but tends to be destructive. In tissue, the results of irradiation are extremely variable, ranging from the acute effects of large doses (hemorrhage, infection, hair loss, or death within a few days to weeks) to delayed effects, including cancer, degenerative organ changes, cataracts, developmental harm to fetuses or immature organisms, and mutation, which sometimes result from very small doses.[15]

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12. As an illustration of half-life, suppose that a certain material has a half-life of one year. If the original quantity is one kilogram, .5 kg remains after one year, .25 kg (half of .5) after two years, and 125 g after three years. Half-lives of common isotopes are:

H–3 (Tritium) 12.3 yrs
C–14 5730 yrs
Co–60 5.26 yrs
Rn–222 3.82 days
Ra–226 1602 yrs
U–238 4,910,000,000 yrs
Pu–239 24,400 yrs

See TURNER, *supra* note 11, App D, at 309–12.

13. It is appropriate to note that under quantum theory as it is presently developed, wave behavior and particle behavior tend to merge. That is, particles have wave lengths and other wave characteristics while electromagnetic energy is found in discrete quantities with observable characteristics like mass. *See* TURNER, *supra* note 11, at 112–14.

14. *See* ASIMOV, *supra* note 3, at 34.

15. TURNER, *supra* note 11, at 225–33.

Specific examples will help illustrate these effects. Alpha particles will not penetrate paper or the dead cell layer of human skin and will travel only a few inches in air. Thus, external exposure to an alpha-emitter will generally do little harm since most of the energy will be deposited in dead tissues. However, ingestion of alpha particles can cause extreme damage since, because of the high levels of energy transferred, alpha particles have a major impact on the limited amount of living tissue they penetrate. This is an especially severe hazard when organisms breathe or inhale gaseous or particulate alph particle-emitters such as radon (R–222) or when an alpha-emitter is ingested or passes through breaks or cuts in the skin.[16]

Beta particles are more penetrating than alpha particles. Depending on their energy, beta particles may travel ten meters or more in air. Thus, they pose a potential threat to the body either as an external or internal source. Because of the variability of the energy available from beta particles from different sources, each type of source must be treated separately.[17]

Gamma radiation and X-rays are essentially identical except for origin. (See Table 1, page 84). These forms of radiation are extremely penetrating. Their effects on matter result from the production of high energy electrons within the matter in question. As a result of their interactions with matter, these types of radiation are absorbed by the matter through which they pass. The amount of absorption is measured by the thickness of matter required to reduce the number of photons by one half. Although gamma radiation can never be fully attenuated, it is possible to reduce it to almost any desired level by interposing sufficient thickness of shielding material.[18]

The biological effects of radiation are principally caused by ionization. As a charged particle interacts with the material inside a cell, it leaves a trail of ionized material. Because the energies involved in this process are much higher than those associated with the ordinary chemical processes within a cell, those are disrupted.[19] If enough processes are disrupted, the cell will die. Although organisms can survive some damage and generally heal themselves, damage, if too extensive, will result in some degree of permanent injury or death. Cell Deoxyribonucleic Acid (DNA), the long complex organic molecules that govern cell reproduction, is particularly vulnerable to damage. Thus effects such as cancer and birth defects may occur with low exposures.

The biological effects of exposure may be divided into two categories, stochastic and nonstochastic. Stochastic processes are those that occur in a statistical manner.

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16. The range of an alpha particle in air depends upon its energy. At the energies commonly associated with alpha emissions from common radionuclides, that range is under 10 cm (alpha particle of about the energy of the alpha particle emitted by Radium–226). Similarly, the range of such a particle in tissue also depends on its energy; however, the ranges are significantly shorter, on the order of .01 cm for particles of the same energy as mentioned above. Sensitive tissues in the lungs are within that distance of the air-tissue interface. Moreover, radioactive materials may be chemically attracted to various body tissues and accumulate there over time. *E.g.*, radium accumulates in bone. *See* discussions in TURNER, *supra* note 11, sec. 3.3, at 45–48 and sec. 4.4, at 81–85 and figs. 4.4, at 83 and sec. 4.5, at 84 and App. D, at 309–12.

17. C–14, a naturally produced isotope used in dating living and formerly living matter, emits beta particles with a maximum range of 10–20 cm. A1–26 emits beta particles that penetrate a maximum of about 10 m of air and about 1 cm in soft tissue. Tritium (H–3) is frequently used in luminous applications. The beta emissions it produces are of fairly low energy; they travel about .3 cm in air and about .001 cm in tissue. *See generally*, TURNER, *supra* note 11, sec. 3.4, at 48–50 and sec. 5.5, at 94–96; figs. 4.4, at 83 and sec. 4.5, at 84; and App. D, at 309–12.

18. *See* J. GOFFMAN, RADIATION AND HUMAN HEALTH, 17–20 (1981).

19. *Id.* at 19–26. Based upon the energies involved, Goffman describes these effects as being analogous to a bull set loose in a china shop.

For example, if a large enough population is exposed to a carcinogen, such as radiation, a certain proportion of that population can be expected to develop cancer; however, the specific response of any individual cannot be forecast. Nonstochastic effects are those for which there is a specific causal relationship between dose and individual response. Skin reddening (a symptom of acute radiation injury) is nonstochastic. For nonstochastic effects, there is ordinarily a threshold level below which no effect is observed. The stochastic effects of radiation exposure have only been observed at relatively high dosage levels; it is not known whether a threshold exists for these effects. As a practical matter, it is more prudent to assume that any dose, no matter how small, will have some attendant risk.[20]

III. USES OF RADIOACTIVE MATERIAL

After this discussion of the various harms engendered by these invisible emanations, undetectable by the natural senses, one wonders why these substances are used for purposes other than research. The answer is relatively straightforward; these forms of radiation produce extremely useful effects. Some of these effects duplicate those available by other means, but through the use of radioactive materials accomplish them more easily or cheaply.[21] Some other effects cannot be obtained any other way than through the use of radiation or radioactive materials.[22] As a result, devices using these materials and effects are ubiquitous.

The atoms of certain types of nuclear material split into nearly equal fragments when they encounter neutrons. This process, called "fission," produces large quantities of energy, in addition to the radioactive effects already discussed.[23] In the Air Force, the principle use of fission and fissionable materials is in nuclear weapons; however, they may also be found in nuclear reactors used for research purposes, nondestructive inspection, or power production.[24]

Radioactive material is used extensively in luminescent devices.[25] These range from handheld compasses and rifle sights to building exit markers, and are found in large numbers throughout the United States. Larger-scale luminescent devices such

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20. TURNER, *supra* note 11, at 225–27.

21. Some examples of this class of devices are smoke detectors, soil density gauges, and many luminescent devices.

22. This class includes diagnostic X-rays, some categories of nondestructive inspection of machinery and equipment, and radiopharmaceuticals.

23. Specifically, uranium (principally U–235) and plutonium (Pu–239) are used in nuclear fission to produce energy. The energy thus derived is used either in power production or in weapons. Attendant to the production of energy is the creation of radioactive materials and the release of large quantities of gamma radiation. Thus, the use of nuclear fission generates all the potential health effects that accompany any other use of radioactive materials, but potentially on a larger scale.

24. Power may be produced from isotopic decay as well as from nuclear fission. Power plants may be built that have a large enough quantity of radioactive material for the material to become hot; the ultimate result of all of the ionization and other interactions involved in nuclear decay is heat. Thermoelectric devices (materials that produce electricity from heat) are then placed in contact with the radioisotopic material, so that the thermal energy from the isotope heats the thermoelectric device and produces electricity. Power plants of this nature have been used in satellites and for remote ground stations.

25. These devices generally work by containing a radioactive material near a material that will glow when bombarded by energetic particles. Tritium (H–3) is frequently used in luminous applications. The beta emissions it produces are of fairly low energy; they travel about .3 cm in air and about .001 cm in tissue. Most commonly H–3 will be contained in gaseous form in a vessel that is lined with or contains phosphorescent material. As an alternative, the H–3 may be chemically combined with other materials to form a solid that is combined with the phosphorescent material. Formerly, radium (an alpha particle emitter) was mixed with phosphorescent materials in paint and the paint was applied to dials, watches, and gauges. *See supra* note 17.

as runway lighting systems, have also been developed for either civilian or militar use.

Several categories of test equipment and instruments also rely on radiatio properties. Those relying on ionization properties include aerosol detectors, such a the M8A1 chemical warfare detector. Neutron scattering and absorption devices ar used for nondestructive inspection; such devices can look for water inside aircraf wings that were glued together without taking the glue joints apart. Additionally, we use soil density gauges that send a beam of neutrons into the Earth and measure the return. A beam of gamma rays may be used for industrial radiography in the same manner as an X-ray machine is used to study the inside of a human body.

Research, especially in biology, biochemistry, chemistry, and medicine, frequently makes use of radioactive materials. Commonly used techniques include such procedures as radioimmunoassay and the radioactive tracer analysis.[26] Some of these same procedures are also often employed in diagnostic medicine. Other techniques such as neutron activation analysis allow the pursuit of trace quantities of materials; for example, analysis of hair and skin can yield informatio n about the diet of the person from whom they came.[27]

Radioactive materials are used to treat diseases as well as to diagnose them. For example, a person suffering from cancer within an organ may be treated either by the ingestion of a radioactive isotope that the body concentrates within a particular organ,[28] or by the implantation of a radioactive source within the area of the tumor. Other conditions (typically cancerous) may be treated by external radiation.[29]

Occasionally it is necessary to use a certain material because of its other chemical or physical properties, despite rather than because of its radioactivity. In that circumstance, the radioactive properties of the material are irrelevant to the reason for its use and generally add to the complexity of handling the product.

Military examples include depleted uranium (DU)[30] ammunition used for anti-tank and anti-armor cannon (such as the 30–mm cannon used on the A–10 aircraft), DU counterweights used on several aircraft to maintain proper balance, and the magnesium-thorium alloy used for some aircraft gearboxes. A civilian example is the mantle in white gasoline camping lanterns.[31]

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26. Radioimmunoassay (RIA) consists of any of a number of techniques that include the introduction of a radioactive isotope into a biochemical reaction in lieu of a nonradioactive isotope. One does the process knowing that the radioactive reagent will take part in the reaction at a known rate, depending on concentration. Measurement of the radioactivity of the final product allows qualitative measurement of the material that reacted with the radioactive reagent. Tracers function by substituting a radioactive isotope for a nonradioactive one in a chemical formulation. Then, the radioactive emission may be used to follow the physical process that moves the material around within a system. For example, if one wanted to study thyroid function, introducing a radioactive isotope of iodine would allow one to follow the metabolic processes that use iodine, including thyroid function.

27. Neutron activation analysis makes use of the fact that neutrons will interact with the nuclei of stable elements to transmute them to an unstable form that will decay and emit a measurable form of radiation characteristic of the stable element transmuted.

28. *E.g.*, radioactive isotopes of iodine are used for treatment of thyroid conditions.

29. Co–60 teletherapy units use high energy gamma rays delivered so as to maximize the energy deposition in a tumor, while limiting that deposited in healthy tissue, thus using the cell-killing effects of high dose gamma radiation to kill tumor cells selectively.

30. Depleted uranium is natural uranium metal after all the fissionable U–235 or U–233 has been removed.

31. Depleted uranium (U–238 with the more fissionable U–235 removed) is used for these items because of its very high density. U–238 is an alpha emitter. Thorium (Th–232), an alpha emitter, is used in magnesium-thorium alloys to improve the metallurgical properties of magnesium and is used as an oxide (ThO_2) in the mantles of white gasoline lanterns and lamps to produce light.

It is not uncommon for even household items to contain radioactive materials. In addition to radioluminescent devices similar to those already described, most households contain one or more smoke detectors. These devices generally contain a small quantity of Am–241, an alpha-emitter.[32] Moreover, even the apparently innocuous television set or computer monitor produces X-rays.[33] Radon (Rn–222), a naturally occurring gas, is found in a large proportion of American homes. Even the brick that surrounds many homes has a measurable content of radioactive materials. Everyone is subject to a certain degree of exposure from a universe of natural sources, including cosmic rays. It is impossible to totally avoid exposure to ionizing radiation.[34]

IV. REGULATION OF RADIOACTIVITY AND RADIOACTIVE MATERIALS

In order to justify the risk to society and to individuals inherent in the use of radioactive materials, it is necessary to weigh the risks and benefits concerned. Obviously, radioactive materials should only be used in circumstances where the benefits outweigh the risks, but even then radiation protection is necessary to obtain the maximum utility for the minimum risks. Radiation protection depends mostly upon preventing or controlling exposure rather than attempting to undo the biological effects of exposure.[35]

Because there are three major routes of exposure—natural sources, medical sources, and the incidental exposure of workers or the public at large—protection strategies vary.[36] For most people the largest source of natural radiation and the major source that is subject to control is radon.[37]

A major distinction between medical exposures and other types is that medical exposures are intentional. In addition to the more-easily-said-than-done advice of avoiding unnecessary procedures, there are a number of specific measures which aid in restricting exposures. They include restricting the size and field of irradiation to the minimum necessary; using harder, more penetrant radiation in therapy (to reduce skin doses); and, in diagnostic procedures, using films and detectors which give the maximum information for the minimum amount of radiation.[38]

In the occupational area, a major tool is the establishment of dosage limits, which set the upper bound of the worker's exposure. These limits, combined with specific procedures that tend to reduce the exposure of workers or members of the public, set the degree of exposure. In determining these dosage limits, the acceptability of risks should be weighed against the costs and benefits that relate to exposure. This assessment should be done in the context of occupational risks and hazards generally.[39]

The final tool of protection is the concept of "as low as reasonably achievable" (ALARA). This idea, that doses from all sources should be ALARA, permeates

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32. The detection device ionizes a small amount of air within a detection chamber. Small plates with opposite charge are located within the ionized region. A measurable electric current flows across the plates. If air and combustion products from a fire enters the smoke detector, the current changes and the detector is activated.

33. The original tube Roentgen used to generate X-rays consisted of a vacuum tube (partially evacuated) with an electron-emitting cathode (negative charge) at one end and a high voltage anode (plate with a high positive charge) at the other. Diagnostic and commercial X-ray tubes are constructed similarly. The picture tube of a television set or computer monitor also has a similar construction, and generates small quantities of X-rays while in operation.

34. *See, e.g.*, POCHIN, *supra* note 6, at 145.

35. *Id.*

36. *Id.*

37. *Id.*

38. *Id.* at 146, 147.

39. *See generally id.* at 161.

radiation protection and regulation.[40] ALARA has been codified by the Nuclear Regulatory Commission and operates in conjunction with all other applicable standards.[41]

In order to provide protection to patients, commodity users, employees, and the public at large, these procedures and concepts of radiation protection have been enacted into a body of law and regulation. Gaining an understanding of the regulatory structure requires knowledge of the physics and the history of atomic energy in this country.

V. THE ATOMIC ENERGY ACT

The mechanism for regulating radioactive materials and radiation consists principally of the Atomic Energy Act of 1954, as amended,[42] and the regulatory program established thereunder. Additional sources of regulation stem from consumer product safety legislation[43] and the Hazardous Materials Transportation Act,[44] and their implementing regulations.

The Atomic Energy Act of 1954 (AEA)[45] and its subsequent amendments[46] created a structure wherein the Nuclear Regulatory Commission (NRC or Commission) regulates specified materials and persons, and the Department of Energy is responsible for the production of nuclear fuel and reactor-produced isotopes, the promotion of nuclear energy, and the production of nuclear weapons. Nuclear materials are defined as source, by–product, and special nuclear materials. Source material is uranium, thorium, or other materials as prescribed by the Commission, or ores of these materials in certain prescribed concentrations.[47] By–product material is any radioactive material other than special nuclear material, yielded in or made radioactive by exposure to radiation, incident to the production or use of special nuclear

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40. ALARA is an internationally recognized concept, serving both as a backstop to specific standards and also as an impetus to improve technology to levels above those that would be obtained from complying with risk-benefit based standards. *See Recommendations of the International Commission on Radiation Protection*, 26 ICRP PUBLICATION and 1 ANNALS OF THE ICRP, ch. 3, at 1–53 (1977). *See generally*, POCHIN, *supra* note 6, at 167.

41. ALARA is defined as "as low as reasonably achievable taking into account the state of technology and the economics of improvements in relation to the benefits to the public health and safety and other societal and socioeconomic considerations and in relation to the utilization of atomic energy in the public interest." *See* 10 C.F.R. § 20.1(c).

42. 42 U.S.C. §§ 2011–96.

43. *See* Electronic Product Radiation Control, 42 U.S.C. § 263b-n, 15 U.S.C. § 2080. *See also* Consumer - Patient Radiation Health and Safety 42 U.S.C. § 10001–08.

44. *See* 49 U.S.C. §§ 1801–12.

45. The Atomic Energy Act of 1954, 42 U.S.C. §§ 2011–96, still the basis for the current statutory law regarding the majority of regulated nuclear energy and radioactivity issues, replaced the nation's original atomic energy legislation, the Atomic Energy Act of 1946, Pub. L. No. 79–555, 60 Stat. 755. The impetus behind the new statute was the increased important of peaceful uses of atomic energy. According to the Senate report accompanying the 1954 legislation, the 1946 Act had considered that atomic energy was 95% a military issue and 5% peaceful. The principal change in the 1954 legislation was the expansion of the role of the Atomic Energy Commission (AEC) regulating and promoting civilian nuclear energy uses. *See* S. REP. No. 1699, 83d Cong. 2d Sess. (1954) *reprinted in* 1954 U.S. CODE CONG. & ADMIN. NEWS 3456–59.

46. As initially established in the Atomic Energy Act of 1954, the AEC was responsible for production of nuclear weapons, promotion of nuclear energy, and regulation of nuclear energy activites. The AEC was abolished by Pub. L. No. 93–438, Oct. 11, 1974. Its regulatory functions were vested in the Nuclear Regulatory Commission (NRC) while its nuclear weapon and nuclear energy functions were vested in the Energy Research and Development Administration (ERDA). The functions of ERDA were vested in the Department of Energy when that was created. Pub. L. No. 95–91, 91 Stat. 577 (1977). *See* 42 U.S.C. § 5814 and 42 U.S.C. § 7151.

47. *See* 42 U.S.C. § 2014(z).

material, i.e., produced in a nuclear fission reactor, but not defined as a fissionable material.[48] Special nuclear material is plutonium, enriched uranium in the isotopes U-233 or U–235, or any other material determined by the Commission to be special nuclear material, i.e., fissionable.[49] Person, as defined by the AEA, is a broad term that includes, among other things, individuals, corporations, partnerships, trusts, and government agencies other than the Commission, and legal successors to defined persons.[50] Except for materials received from the Department of Energy for military purposes under AEA section 91(b), and also subject to constitutional limitations, the Air Force is subject to NRC regulation of its source, by–product, and special nuclear material.[51] The AEA contains no waiver of federal supremacy or sovereign immunity.

The NRC issues regulations under the authority of the AEA.[52] These regulations[53] govern the possession, storage, use, and manufacture of by–product, source, and special nuclear material, and devices that contain these materials. The basic regulatory technique of the NRC is the issuance of licenses. Licenses may be issued on a wide range of products over an extremely broad range of regulation. In order to improve its control over the internal regulation of radioactive materials, and, in particular, to improve its ability to deal with personnel or operational changes within a unit or organization using radioactive materials, the Air Force has applied for and received a single license covering all uses of radioisotopes within the Air Force.

Implementing the Air Force's broad license is a problem of difficulty and delicacy. The Air Force has placed the overall management of radioactive materials in the hands of a multidisciplinary Headquarters Air Force committee called the Air Force Radioisotope Committee (RIC). The RIC has two principal functions. Within the Air Force, it is the principal regulator of radioactive materials. To the NRC, the RIC is the body treated as the licensee. Thus, the RIC serves both as regulatee and regulator.

The RIC's major regulatory tool is the permit. Because each use of radioactive materials within the Air Force must come under the Air Force license, the RIC issues permits to each user to ensure that they will comply with law and regulations. When a user demonstrates inability or unwillingness to use the radioactive materials in compliance with the terms of the permit, the permit may be modified. This modification may be drastic and without the user's consent, to ensure that the permitted materials are used in a safe and lawful manner. This sort of permit amendment has the potential seriously to disrupt the mission of the permitted activity.

The RIC has good reason to communicate freely with the NRC on all matters where technical information exchange is useful; it must do so on all matters where reporting is required. However, since the NRC has both a technical (licensing) responsibility and an enforcement responsibility, those technical communications made for the purpose of information sharing may also form the basis for an enforcement action. Alternatively, failure to communicate with the NRC where required may be expected to form the basis of some degree of enforcement action. Moreover, the NRC is generally deemed to view the RIC principally as a regulated entity, not as a subordinate regulator.

48. *See* 42 U.S.C. § 2014(e)
49. *See* 42 U.S.C. § 2014(aa).
50. 42 U.S.C. § 2014(s).
51. *See* U.S.C. § 2121(b). *See also* 42 U.S.C. §§ 2077 and 2092.
52. 42 U.S.C. § 2201(p).
53. These regulations are issued under 10 C.F.R., and in particular 10 C.F.R., parts 11, 20, 30, 33, 40, 73.

Structurally, the RIC is a committee with voting members from the Inspector General, the Surgeon General, the Judge Advocate General, transportation, supply, and operational users. Additionally, the RIC has a full-time staff consisting of two health physicists (one of whom is the executive secretary), and administrative assistant, and a clerk typist. The RIC also has several regular consultants such as people from the Air Force office charged with dealing with radioactive waste.

In order to fulfill its responsibilities within the Air Force and to the NRC, the RIC is the office of primary responsibility (OPR) for the publication of Air Force Regulation (AFR) 161–16. This regulation creates the framework for implementing all NRC requirements within the Air Force. Moreover, to implement enforceability within the Air Force, certain provisions of AFR 161–16 are made criminally enforceable under the Uniform Code of Military Justice (UCMJ).[54]

Each Air Force activity using radioactive materials must have a RIC permit. By policy, this requirement has been extended to materials that are not regulated under the AEA, such as radium. The permittee is the senior management official responsible for the activity using the materials. Thus, each base may have several permits, depending on its uses of radioactive materials. Ordinarily, permit holders at base level include commanders or functional managers of maintenance activities, as well as the hospital commander.[55] Unusual activities will generate additional permit requirements.

Additionally, the transportation of radioactive materials is regulated both by the NRC and by the Department of Transportation (DOT) under the Hazardous Materials Transportation Act.[56] Regulatory requirements are graded based upon the nature and quantity of radioactive materials present, the structure of the material to be shipped (e.g., loose or encapsulated), and the means of transportation to be used. Regulatory requirements will cover packaging and packing, sealing, labelling, manifesting and documentation. Transportation requirements apply to both waste and usable commodities, and appropriate care is needed to identify these commodities prior to shipment.

Additional regulatory issues may arise from nuclear material received from the Department of Energy under section 91(b) of the AEA,[57] so-called "91(b) materials." Although not within the jurisdiction of the NRC or the RIC, these present legal problems of their own. Generally, 91(b) materials are nuclear weapons, but they also include several other types of substances, particularly those used in research. In this latter category, they may be found in close proximity to NRC-licensed materials. Keeping them straight may be a difficult task if the people responsible for actual use are not scrupulous about their documentation. Additionally, 91(b) materials are regulated within the Air Force through an entirely separate process. Although 91(b) materials are subject to a similar, and usually stricter, scope of regulation than NRC-licensed substances, they are not subject to *public* scrutiny in the way that NRC-licensed materials are.

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54. *See* Air Force Reg. (AFR) 161–16, Control of Radioactive Material (16 Dec. 1988).

55. The Base Precision Measurement Equipment Laboratory Chief will hold a permit for RADIAC calibration sources; the chief, disaster preparedness, will hold a permit for chemical warfare detectors; the hospital commander will have a permit for radiopharmaceutical and radioactive treatment devices; and other maintenance activities, particularly at Air Logistics Centers, will hold permits for nondestructive inspection or processing of thorium alloys.

56. *See* 46 U.S.C. §§ 170, 2106; 49 U.S.C. §§ 103, 104, 106, 1471, 1472. 180–13. Applicable regulations include 10 C.F.R., pt. 71 and 49 C.F.R., pts. 170–89.

57. 42 U.S.C. § 2121(b).

VI. IMPACT ON OTHER LAWS

A. NEPA

The National Environmental Policy Act (NEPA)[58] requires that major federal actions significantly affecting the quality of the human environment be subjected to scrutiny sufficient to produce a detailed study of their environmental impacts.[59] NEPA has been implemented by Council on Environmental Quality (CEQ) regulations that prescribe the study and documentation requirements and set out procedurally how these requirements are to be met.[60] The crucial point is that the granting of a RIC permit is a federal action, subject to NEPA. Although most RIC actions, like most Air Force actions, generally are apt to be categorically excluded from NEPA documentation requirements,[61] this issue must be fully evaluated in connection with each permitting action. Moreover, it must be anticipated that some permitting actions will require either environmental assessments[62] or environmental impact statements.[63] Thus, permit applications, as well as RIC review of permits, should reflect appropriate NEPA consideration.

For NRC practice outside the scope of the Air Force license, the practitioner must remember that NRC licensing actions are also subject to NEPA documentation requirements.[64] However, since the agency taking action will be the NRC, the NEPA implementing regulations and categorical exclusions will be those of the NRC, not the Air Force or other federal agency.[65] Ordinarily, if NEPA study is required, the agency or entity proposing the action will be obliged to do it, with approval (in the form of a finding of no significant impact or record of decision)[66] reserved to the NRC or other agency with approval authority.

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58. *See* 42 U.S.C. §§ 4321–61.

59. *See* NEPA, sec. 102(2)(C), 42 U.S.C. § 4332(2)(C).

60. *See* 40 C.F.R. §§ 1500–08.

61. Categorical exclusion (commonly called "catex") of a type of action means that the agency that promulgated a catex has determined that a category of actions has no individual or cumulative environmental significance. *See* 40 C.F.R. § 1508.4. Categorical exclusions must be adopted by the agency as a part of its promulgation of regulations that implement the CEQ Regulations. Air Force categorical exclusions are found in AFR 19–2, atch. 7. In using categorical exclusions, the cautions restricting their use (*see* AFR 19–2, atch. 7, para. 1) must also be applied. Although none of the categorical exclusions found in atch. 7 specifically apply to RIC action, some may apply based upon the specific facts of the decision. For example, if the action will authorize the purchase of a commercially available sealed source, particularly one which is generally licensed, para. 2v, AFR 19–2, atch. 7, would suffice to meet the NEPA requirement. Additionally, one may assert that NRC categorical exclusions routinely applied to NRC licensing actions may be used by the RIC in its considerations. *See* 10 C.F.R. § 51.23. This proposition is untested and arguable. A better course would be the regulatory adoption by the Air Force of NRC categorical exclusions, and the author has so recommended.

62. An environmental assessment is a concise public document that briefly provides sufficient information either to prepare a finding of no significant impact or to determine the necessity to prepare an environmental impact statement. *See* 40 C.F.R. § 1508.9.

63. An environmental impact statement is the detailed statement required by NEPA, sec. 102(2)(C). *See* 40 C.F.R. § 1508.11.

64. *See* NEPA, sec. 102(2)(C), 42 U.S.C. § 4332(2)(C).

65. *See* 10 C.F.R., pt. 50 for NRC NEPA regulations. Note that other agencies may also have licenses as broad or nearly as broad as that of the Air Force. In such a case, look to the NEPA regulations of the agency that is taking action.

66. A record of decision (ROD) is a concise public document setting forth the agency's considerations and determinations in the matter studied by an environmental impact statement. *See* 40 C.F.R. § 1505.2.

B. CERCLA/SARA

Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendment and Reauthorization Act of 1986 (SARA), section 121(d),[67] any promulgated requirement that is legally applicable to or relevant and appropriate to a cleanup of a hazardous substance or pollutant or contaminant as defined in CERCLA/SARA[68] is to be applied to such a cleanup.[69] The AEA and its implementing regulations set forth such requirements. However, the determination of whether the requirement is "legally applicable" or "relevant and appropriate" is potentially both extremely difficult and extremely significant.

Under EPA guidance, a requirement is "legally applicable" if the specific terms of the law (or jurisdictional prerequisites of the law) or regulation directly address the circumstances at the site. A requirement is "relevant and appropriate" when circumstances at the site are, based upon "best professional judgment," sufficiently similar to the problems or situations regulated by the requirement.[70] If a requirement is "legally applicable," then it applies *in toto*. If a requirement is "relevant and appropriate," then only those portions that are relevant and appropriate apply.[71] This distinction may have a major impact in terms of the specific cleanup at a site.

Two simple examples may illustrate the difference. First, let us assume that a quantity of licensed material, DU, used as an aircraft counterweight, was buried at the end of a runway when the aircraft in which it had been installed was destroyed in a terrorist incident. The remedial action in that case would require compliance with all NRC requirements applicable to the circumstances, since the DU was licensed material in the possession of a licensee, specifically including reporting requirements, worker exposure standards and release standards. Alternatively, let us assume that an unknown (or known and known not to be licensed) radioactive material was buried in a similar situation. In that circumstance, "relevant and appropriate" requirements would include health and safety based standards but not necessarily purely regulatory requirements. Although the distinction may be subtle, it could account for significant differences in the specifics of a chosen remedy.

C. Problem Areas

Wright-Patterson AFB Americium Incident. In September 1986, during the inventory and inspection of radioactive materials storage drums in Building 4060, a spill of Americium (Am–241) occurred. The individuals involved in the incident sealed the building and evacuated it. After discussing the matter with their superior, a decision was made not to report the incident and instead to attempt an in-house cleanup. Later, after this was found to be impracticable, and after people aware of the matter felt that the base commander should be notified, he was informed of the incident. At his direction the RIC was notified. The RIC attempted to inform the

67. 42 U.S.C. § 9621(d).
68. *See* CERCLA/SARA, sec. 101(14), CERCLA/SARA, sec. 101(33) and CERCLA/SARA, sec. 102; 42 U.S.C. §§ 9601(14), 9601(33), and 9602.
69. Such requirements are commonly called ARAR's.
70. *See* EPA Office of Solid Waste and Emergency Response Directive 9234.1–01 (OSWER 9234.1–01), *CERCLA Compliance With Other Laws*, draft guidance, 1–5 (Aug. 8, 1988).
71. *See* OSWER 9234.1–01, *supra* note 70, at 1–10.

NRC through NRC Region IV, which has cognizance of the Air Force license, but through a number of errors within the Air Force and among the NRC regions concerned,[72] the NRC was not fully notified until after a second major release (still within Building 4060) had occurred. Adding to the complexity of the problem was that the barrel of material was not Air Force property and was not included on the base permit. It had been illegally acquired by the Base Radiation Safety Officer (RSO), who was doing a favor for a friend. Moreover, the barrel was not labelled or identified as to its specific radioactive materials or contents. Thus, the people involved in the cleanup had no specific idea what they were dealing with. Furthermore, one of the workers involved in the cleanup, during the second release, ingested a small dose of Am–241. As a result, NRC Region III was convinced that a major health-threatening release had occurred and that a coverup was in progress. Not all of the administrative matters involved in the incident are complete at this writing.

This incident resulted in the indictment and conviction of the RSO, several congressional hearings, a large amount of adverse publicity, embarrassment, unpleasantness, and a notice of proposed civil penalty levied against the Air Force by the NRC.[73] The issues raised by this notice, including the constitutionality of the action,[74] remain unresolved.

Keesler AFB Radiation Safety Committee Incident. In December 1985, the Radiation Safety Committee (RSC) at the Keesler Air Force Base Hospital had a problem. They were using radioiodine (I–125) in a diagnostic procedure. Since the iodine used in the procedure was generally licensed,[75] no special authority from the NRC was required to use it or to dispose of it, provided that the use met the conditions set out in the general license. However, the hospital desired to keep a supply on hand in excess of the limits set out in the general license, apparently for logistical reasons. Accordingly, they needed a special license from the NRC. While the license application was pending, the hospital needed a way to dispose of the waste. Incineration, which would have been acceptable under the general license, was the means the RSC chose, and the December 1985 minutes of the RSC so reflect. Unfortunately, it was not authorized in the absence of a license.

When the minutes of the Keesler RSC were reviewed by the RIC in January 1986, the RIC noted the difficulty. The RIC telephonically told the Keesler RSC to cease any such disposal until it had been approved by the NRC. Nothing further was heard from the Keesler RSC until the June 1987 minutes were being reviewed by the RIC. Those minutes reflected that the Keesler RSC had voted to continue incineration of I–125 diagnostic wastes, even though NRC approval was still pending. They were immediately notified by message to stop. Thereafter, the NRC authorized the incineration of the wastes.[76] Although there was no significant health or environmental risk, these events appear to constitute willful noncompliance with NRC regulations and the AEA. The NRC is now investigating the matter.

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72. NRC Region III geographically includes Wright-Patterson Air Force Base, Ohio.

73. *See* Notice of Violation and Proposed Civil Penalty, United States Department of the Air Force, Wright-Patterson Air Force Base, OH. Docket No. 030–28641, License No. 42–23539–01AF, USAF Permit No. 34–00472–02.

74. The Air Force has challenged the constitutionality of the NRC penalty action on the basis that it is the duty of the President to resolve disputes among agencies of the Government and that Congress lacks authority to legislate in a manner inconsistent with the President's authority. This matter and ancillary issues have been referred to the Office of Legal Counsel, Department of Justice.

75. *See* 10 C.F.R. § 31.11.

76. I–125 waste incineration has not resumed since the local air pollution authority has denied the hospital a permit to emit radioactive materials from their incinerator.

Transportation Violations. Compliance with transportation regulations has been an issue of ongoing concern to the Air Force. Failure to meet all of these requirements usually results in the issuance of a notice of violation (NOV) and, in the case of shipments involving radioactive wastes, may result in the Air Force being denied access to commercial low level waste consolidation and disposal sites. There are only three such sites in the nation: in Washington State; in Nevada; and, most often used by the Air Force, at Barnwell, South Carolina. Proper shipment of a radioactive commodity or waste requires correct identification of the requirement and then correct application of appropriate standards. Because of the difficulty inherent in a local organization's compliance with complex technical requirements, the Air Force has developed procedures to assist bases in processing waste shipments. The Air Force technical order for the shipment of radioactive wastes requires that the generator identify the radioactive shipment through the base RSO and request transportation instructions from SA-ALC/MMI. Upon receipt of the instructions, if the shipment is qualified for local packaging and shipment, the shipment is to be packaged in compliance with instructions. As an additional cross-check, the base RSO (bioenvironmental engineer) is tasked with verifying compliance with the instructions. Requirements for transporting nonwaste commodities are contained in Air Force transportation directives (AFR 71–4). It is imperative that the radioactive materials be accurately and fully identified to transportation personnel, or a shipping error will invariably result. When a violation occurs, the parent Major Command will be notified and directed to investigate.

Radioactive Aircraft Components. Many common aircraft contain radioactive components. Under normal circumstances, these present little or no difficulty, but in emergency or unusual situations they may be very troublesome. Some specific examples are listed below.

CH–53 rotor blades contain a radioactive blade integrity monitoring system called IBIS. When the rotor blades are removed for maintenance, they must be packaged and shipped as radioactive materials; moreover, the recipient must be licensed to receive them. In an aircraft accident scenario, the blades must be accounted for and appropriate health and environmental precautions taken.

A–7 aircraft contain DU counterweights and a radioactive engine oil gauge (nucleonic oil gauge). In aircraft crash scenarios and when an engine is removed from the aircraft for shipment, appropriate actions must be taken. If the engine is to be shipped, it is generally most appropriate to remove the nucleonic gauge first. It is easier to ship the gauge as a radioactive commodity than it is to ship the engine as a radioactive commodity.

Many aircraft contain magnesium-thorium (mag-thor) alloy components, particularly gearboxes, and DU components. Prior to machining or modifying these parts, the entity doing the work must have an NRC license to do so.

30 mm anti-armor ammunition for A–10 aircraft contains a DU penetrator that is an NRC licensed commodity. Use of this ammunition for display purposes is an extremely bad idea and is prohibited by Air Force regulation. Failure to comply risks transferring the display to an unlicensed individual or shipment of the display without complying with transportation requirements.

VII. FAME

This is an area of political and emotional significance, frequently out of proportion to the risks involved. Often, if solid thought had been applied to situations such

as these, the problems could have been identified and dealt with prior to their becoming major problems. The attorney has the significant role as a counselor of frequently being in a position to be the voice of caution and reason, the voice that asks the questions that need to be answered if trouble is to be averted.

In the context of radioactive materials, the voice of reason must first be aware of the situation and then look past the facile answers that are frequently interposed when proper questions are raised. Becoming aware of situations before they turn into problems can be easier to say than to do, so a few suggestions may be in order: (1) The attorney should be involved in review of all papers used in a permit or license application. (2) He should review all RSC agendas and minutes. (3) Consider having an attorney sitting as a voting member of the RSC for hospitals or other major permittees. (4) When an incident or violation occurs, the attorney must be notified in a timely manner. (5) He should be familiar with all radioactive materials routinely used on the installation, including airborne and weapons-related uses. (6) When involved in an aircraft accident or disaster response, the attorney should ascertain whether correct actions on legal requirements are being taken.

After a violation or incident occurs, the attorney should participate in the investigation, in a manner similar to the way he would participate in any major investigation of complex factual or legal issues. When the investigation is complete, appropriate advice on criminal and disciplinary matters is needed; UCMJ or civilian prosecution should not be overlooked. When such action is warranted, the Air Force must be in the lead, not acting as a perceived or actual obstacle.

Finally, the attorney should be able to use reasonable prudence—in essence, to ask the old motor pool question, "Is this trip necessary?" Unnecessary use, transportation, or possession of radioactive materials needlessly risks all of the potential environmental, health, and political harms relating to these materials. Moreover, since there will be times when it is necessary to use, transport, or dispose of these materials, it is incumbent on everyone involved in the process to ensure compliance with all requirements, including those of sound judgment.

TABLE 1
Most Common Ionizing Radiations

Radiation	Electrical Charge	Nature	Stopped by	Typical Source
Alpha Particle	+ +	High Speed Helium Nucleus	Sheet of paper	Decay Product
Beta Particle	+ or −	High Speed Electron	Varies From sheet of paper to 2 cm of aluminum	Decay Product or Particle Accel-erator
Gamma Rays	0	Electro-magnetic Radiation	Varies From 1 mm to over 15 cm of lead	Decay Product
X-Rays	0	Electro-magnetic Radiation	Varies From 1 mm to over 5 cm of lead	From X-Ray Machine, Particle Accel-erator, or other Artificial Source
Neutrons	0	Portion of Atomic nucleus	Varies From 2 cm to over 100 cm of water	Decay Product, Nuclear Reactor, Particle Accel-erator
Mesons (several types)	+, 0, −	Subatomic particles	Varies greatly	Cosmic Rays, Particle Accel-erators

Source: R. Gray and L. Gordy, *Attorney's Textbook of Medicine*, Vol. 3A, at 69–4.

Chlorofluorocarbons: A Scientific, Environmental, and Regulatory Assessment

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I. INTRODUCTION

Two of the most potentially serious man-made influences on the Earth's biosphere are depletion of the stratospheric ozone layer and global climatic changes, both presently being brought about by chlorofluorocarbon (CFC) emissions.[1] Improbable as it may seem, our increasing use of an apparently benign and beneficial group of aerosol sprays, refrigerants, solvents, and related compounds appears to be having serious long-term effects in the stratosphere,[2] direct effects on the Earth's climate, and the potential to cause irreversible damage to life on Earth.[3] One of the ironies of contemporary technological civilization is that some technological advances, which seem ideal for their immediate purposes, may have unsuspected side effects with serious long-term consequences for society.[4]

In recent years, increasing quantities of CFC's have been released into the atmosphere. When used as aerosol propellants, refrigerants, solvents, foam-blowing agents, and in the production of plastics and resins, these compounds are emitted into the atmosphere and slowly drift into the stratosphere.[5]

The technological attraction of these CFC's lies in a combination of qualities that makes them ideal for this variety of uses. These qualities include chemical stability, noncorrosiveness, nonflammability, nontoxicity, and low cost.[6] But the very stability that makes them so ideal for their designed purposes also permits them to remain inert until they migrate from the troposphere to the stratosphere. Scientists theorize that in the stratosphere CFC's are decomposed by ultra-violet (UV) radiation, producing atoms of chlorine and chlorine oxide. These atoms, in turn, react with ozone

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1. Worldwatch Institute Says Climate Change, Ozone Layer Depletion Threaten Life on Earth, 17 Env't Rep. (BNA) 1796 (Feb. 20, 1987). The term chlorofluorocarbons (CFC's), or fluorocarbons, or freons (one of their trade names) refers to clorofluoromethanes (CFxC1yH2) and other chlorofluoroalkanes. The terms fluorocarbon–11 (CFC–11) and fluorocarbon–12 (CFC–12) refer to CFCL3 and CF2CL2 respectively, produced by any number of various manufacturers. Federal Task Force on Inadvertent Modification of the Stratosphere, Council on Environmental Quality and Federal Council for Science and Technology, Fluorocarbons and the Environment (1975). *See infra*, note 21.

2. The stratosphere starts between 8km (26,000 feet) and 16km (52,000 feet) above sea level, depending upon latitude, and continues to approximately 50km (160,000 feet). The troposphere is the region of the atmosphere from ground level up to where the stratosphere begins. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 1.

3. THE ECONOMICS OF MANAGING CHLOROFLUOROCARBONS, STRATOSPHERIC OZONE AND CLIMATE ISSUES 2 (J. Cumberland, J. Hibbs and I. Hoch eds. 1982) [hereinafter CHLOROFLUOROCARBONS].

4. CHLOROFLUOROCARBONS, *supra* note 3, at 1.

5. T. STOEL, A. MILLER, & B. MILROY, FLUOROCARBON REGULATION: AN INTERNATIONAL COMPARISON 3 (1980) [hereinafter FLUOROCARBON REGULATION].

6. PANEL ON STRATOSPHERIC CHEMISTRY AND TRANSPORT, NATIONAL ACADEMY OF SCIENCES, STRATOSPHERIC OZONE DEPLETION BY HALOCARBONS: CHEMISTRY AND TRANSPORT 1 (1979).

to break it down into molecules of ordinary oxygen that are more stable than th ozone.[7] The result is depletion of the stratospheric ozone layer.

Mounting evidence indicates that the use of CFC's has damaged, and is continu ing to damage, the Earth's stratospheric ozone layer in just this way. Though les conclusive, evidence also suggests that damage to the ozone layer allows increase amounts of biologically damaging UV radiation to reach the Earth's surface, resultin in an increased incidence of skin cancer in human beings, and injury to crops livestock, materials, and even whole ecosystems.[8] Additionally, during the long period CFC's reside in the troposphere, they are believed to contribute to a gradual rise in the Earth's temperature by absorbing the emissions of infrared radiation from the surface of the Earth.[9]

Until very recently, dispite these potentially serious consequences, CFC production and use in the United States remained relatively uncontrolled. Scientific uncertainties as to CFC effects,[10] the lack of economically viable alternatives,[11] opposition to regulation by producers of CFC's,[12] and governmental indecision[13] led to this regulatory void. However, the time has now arrived when regulation of CFC's is necessary to prevent dire consequences for this planet.

II. SCIENTIFIC EVALUATION OF CHLOROFLUOROCARBON EMISSIONS

The best scientific verification of the CFC ozone depletion theory would be the actual measurement of ozone depletion in the stratosphere.[14] Because the daily and seasonal variations in ozone are sizable, a large number of precise ozone measurements would be required, as would data on long-term ozone trends, to distinguish between natural ozone fluctuations and man-made changes.[15] However, these measurements have been difficult to accomplish. While improved data supporting the CFC ozone depletion theory is presently being accumulated, the total net amount of ozone depletion remains controversial in the scientific community.[16]

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7. FLUOROCARBON REGULATION, *supra* note 5, at 3.
8. CHLOROFLUOROCARBONS, *supra* note 3, at 2.
9. *Id* at 1.
10. See FLUOROCARBON REGULATION *supra* note 5, at 10.
11. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 4.
12. *Little Support Shown for Mandatory Ban of Some CFC Uses Under Ozone Convention*, 7 Chem. Reg. Rep. (BNA) 1603 (Feb. 3, 1984).
13. *U.S. Prepares for International Forum with Cautious Position on More Regulation*, 6 Chem. Reg. Rep. (BNA) 949 (Nov. 25, 1982).
14. The atmosphere may be divided into three regions - the troposphere, the stratosphere, and the mesosphere. The troposphere contains about 87% of the air mass, the stratosphere slightly less than 13%, and the mesosphere only about 0.1%. The troposphere is the region near the ground. Any material released into the troposphere soon becomes evenly distributed throughout it, due to rapid vertical mixing. The tropopause is a boundary between the troposphere and the less dense air of the stratosphere. Transfer of gases between the troposphere and the stratosphere is very limited because of the boundary effect of the tropopause. The stratosphere is a region of very stable air mass with high density air at the bottom. Mixing occurs very slowly in the vertical direction, but gases are transported and mixed by the large-scale, nearly horizontal, movement of air masses. FORZIATE, *The Chlorofluorocarbon Problem*, in CHLOROFLUOROCARBONS *supra* note 1, at 42–43.
15. FLUOROCARBON REGULATION, *supra* note 5,,at 10.
16. Sand, *Protecting the Ozone Layer: Vienna Convention is Adapted*, 27 ENV'T Vol. 5, at 19, 20 (1985).

A. Stratospheric Ozone

Ozone is a form of oxygen that exists in minor quantities in the atmosphere.[17] Most atmospheric ozone resides in the stratosphere,[18] where it is maintained in equilibrium by natural processes through which it is continually formed and destroyed.[19] The natural rate of ozone formation is almost exclusively dependent upon the amount of incoming UV solar radiation and is virtually independent of human influence.[20]

B. Chlorofluorocarbons[21]

Chlorofluorocarbons are compounds that contain chlorine and fluorine, and sometimes hydrogen, directly bonded to carbon atoms.[22] The principal CFC's are CFC–11 and CFC–12, accounting for approximately eighty percent of total CFC production. Both have high emission rates and are long-lived in the stratosphere.[23] These CFC's are used in pressurized products as propellants, in refrigeration equipment, and in solvents, cleaners, foam-blowing agents, and industrial processes,[24] many of which are vital for military hardware production and operations.

Almost all CFC's, which are produced in large quantities worldwide, ultimately are released into the atmosphere.[25] CFC–11 and CFC–12 are not appreciably decomposed chemically in the lower atmosphere,[26] because they are virtually inert chemicals in the troposphere.[27] There appear to be no significant natural disposal methods (or sinks), other than stratospheric processes, that exist for CFC's in the environment.[28] In view of the long lifetimes of CFC's and the lack of any significant

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17. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 1. Ozone is generated by ultra-violet (UV) solar radiation splitting a normal oxygen molecule and the subsequent combination of the liberated oxygen atoms with another oxygen molecule to form ozone. *Id.* at 8.

18. *Id.* at 8.

19. *Id.* at 1.

20. *Id.* at 8.

21. CFC's are a series of chemical compounds that contain chlorine, fluorine, and carbon, and sometimes hydrogen. Specific CFC's are identified by a system of code numbers involving two or three digits, as developed by E. I. DuPont de Nemours and Co. in 1956. (Freon Products Division, E.I. DuPont de Nemours and Co., Bulletin R–29, Refrigerant Numbering Systems (no date)), and adapted by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers in 1957. (American Society of Heating, Refrigeration, and Air-Conditioning Engineers, Inc., ASHRAE Standards 34–57 and 34–78 (1957)). Briefly, the identifying digits are determined as follows: (1) The number of fluorine atoms in the compound is represented by the first digit on the right. Thus, CFC–12 has two fluorine atoms. (2) The number of hydrogen atoms plus one determines the second digit from the right. Thus, CFC–12 has no hydrogen atoms. (3) The number of carbon atoms minus one is indicated by the third digit from the right. If the resulting digit is zero, the zero is omitted from the code number. FORZIATE, *supra* note 14, at 37–38.

22. FORZIATE, *supra* note 14, at 36.

23. CHLOROFLUOROCARBONS, *supra* note 3, at 3.

24. FLUOROCARBON REGULATION, *supra* note 5, at 7.

25. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 7.

26. FLUOROCARBON REGULATION, *supra* note 5, at 7.

27. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 7. An important feature of these chemicals is their chemical stability. This stability contributes to their safety and usefulness but also to their potential threat to stratospheric ozone. Because of their stability in the lower atmosphere, their atmospheric concentration may remain high for many years after release. Camm, Hammitt, & Wolf, *Product Uses and Market Trends for Potential Ozone-Depleting Substances, 1985–2000*, 1986 RAND CORP. REP. NO. R–3386–EPA, at 3.

28. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 7. While destruction in the troposphere has been suggested by many processes, the major process of removing CFC's from the troposphere is transport into the stratosphere, where CFC's are decomposed by solar radiation. FORZIATE, *supra* note 14, at 42; *see also* FLUOROCARBON REGULATION, *supra* note 5, at 10.

disposal sinks, continued large CFC emissions will lead to high CFC concentrations in the troposphere.[29]

C. Scientific Assessment

A significant fraction of the CFC's released is expected to move by atmospheric circulation and diffusion up to the stratosphere,[30] but the migration of CFC's into the stratosphere is very slow. While scientific measurements have presently detected the presence of CFC's in the stratosphere, it will take many years for a major portion of the total volume of CFC's discharged in a given year to reach that height.[31] Because of the slow diffusion of CFC's into the stratosphere, even if no additional CFC's were released, further CFC migration and hence further reductions of stratospheric ozone would continue, reaching a maximum rate of ozone depletion approximately ten or more years after cessation of CFC emissions.[32]

Scientists have hypothesized that CFC's that have diffused through the troposphere into the stratosphere release chlorine atoms that start a catalytic chain of events resulting in a net reduction of ozone molecules.[33] Subsequent research generally supports this theory.[34] It is now accepted by a majority of scientific authorities that when CFC's migrate into the stratosphere they are broken down by solar radiation.[35] This reaction releases free chlorine atoms; the free chlorine atoms then act to decrease gradually the average concentration of ozone by means of a complex set of catalytic chain reactions.[36] The end result of these chain reactions is that stratospheric ozone is transformed into other forms of oxygen.[37]

With increased scientific concern over CFC emissions came increased public concern, which quickly brought increased political concern. F. Sherwood Rowland, a pioneer in CFC emissions and stratospheric effect,[38] testified in June 1986 that a hole existed in the ozone layer over Antarctica. The existence of such a hole came as a profound shock to most atmospheric scientists, because atmospheric models had not predicted it.[39]

The catalyst for the scientific and public concern was, and remains, the stratospheric ozone hole occurring over Antarctica during the spring. Ozone levels in Antarctica during the spring have dropped as much as fifty percent from 1979 to

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The fact that CFC's are not easily chemically decomposed is supported by research that has found CFC concentrations in the atmosphere to be consistent with the total world release of CFC's to date. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 7.

29. FORZIATE, *supra* note 14, at 40. Measurements of atmospheric CFC's indicate that CFC–11 has a lifetime between 40 and 80 years, CFC–12 in excess of 100 years. *CFC–11 Lifetime Shorter Than Thought, Scientists Say Best Measurements Show*, 6 Chem. Reg. Rep. (BNA) 28 (Apr. 9, 1982).

30. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 7.

31. *Id.*

32. *Id.* at 9.

33. FLUOROCARBON REGULATION, *supra* note 5, at 8.

34. *Id.*

35. Sand, *supra* note 16, at 19.

36. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 1. While stratospheric ozone can be destroyed by a number of chemical reactions besides those involving CFC's, CFC's emissions are of major importance in ozone depletion as they are very long lived and rapidly increasing. CHLOROFLUOROCARBONS, *supra* note 3, at 30.

37. CHLOROFLUOROCARBONS, *supra* note 3, at 3.

38. Molina & Rowland, *Stratosphere Sink for Chlorofluoromethanes: Chlorine Atom Catalyzed Destruction of the Ozone*, 249 NATURE 810 (1974).

39. F. Sherwood Rowland, University of California Chemistry Professor, Remarks before Congress, reported in *Senators, Scientists Urge Policy Shifts to Avert Problems From Atmospheric Changes*, 17 Env't Rep. (BNA) 164 (June 13, 1986).

1985.[40] The chemical process described earlier is suspected of being fundamentally responsible for the formation of this Antarctic ozone hole.[41] Stratospheric ozone shield depletions over Antarctica may be foreshadowing similar depletions worldwide.

There exists little scientific uncertainty as to the proposition that CFC's do rise through the atmosphere to deplete stratospheric ozone chemically. However, the rate and effect of this depletion is continually being reevaluated to correspond with current scientific evidence. To reiterate Professor Rowland's thoughts, perhaps the prudent solution to this scientific uncertainty is to discontinue this experiment on Earth's atmosphere without waiting for all the scientific answers.[42]

III. EFFECTS OF CHLOROFLUOROCARBON EMISSIONS ON EARTH'S BIOSPHERE

Ozone in the stratosphere absorbs much of the potentially harmful wavelengths of UV radiation that the sun emits. If allowed to reach the Earth's surface in sufficient quantities, this UV radiation can be harmful to humans, animals, and plants as will be explained later. Ozone concentrations at various atmospheric altitudes also affect temperatures, air movement, and the downward emission of infrared radiation, which in turn influences climate.[43] Increased global temperature and the effects of increased destructive ultra-violet (DUV) radiation reaching the Earth's surface are believed to be the two most serious consequences of continued CFC emissions.[44]

In support of a lawsuit brought during 1984, the Natural Resources Defense Council, Inc. (NRDC) asserted that the breakdown of ozone in the stratosphere would lead to an increased amount of UV radiation reaching the Earth's surface. According to NRDC, this would result in tens of thousands of additional skin cancers, the disruption of the human immune system and the marine food chain, and disastrous changes in crop yields and in the Earth's climate.[45]

A. Ultra-Violet Radiation

One of the principal reasons why release of CFC's to the atmosphere is considered to be of such potential importance is that a reduction in the average long-term concentration of ozone would result in an increase in the amount of harmful DUV radiation reaching the Earth's surface.[46] Stratospheric ozone screens DUV radiation in sunlight, blocking it from penetrating to ground level.[47] A one percent decrease in stratospheric ozone is accompanied by a two percent increase in DUV radiation received at the surface of the Earth.[48] Presently there exists persuasive clinical and

40. *Institute on Climate Formed to Educate Public About Potential Threat*, 17 Env't Rep. (BNA) 671 (Sept. 5, 1986).

41. *Id.*

42. F. Sherwood Rowland, University of California Chemistry Professor, Remarks Before Congress, reported in *Senators, Scientists Urge Policy Shifts to Avert Problems From Atmospheric Changes*, *supra* note 39.

43. *One-Third Reduction in Global Emissions Possible in Short-Term, World Resources Institute Report Says*, 10 Chem. Reg. Rep. (BNA) 1176 (Dec. 5, 1986).

44. *Studies on Effects on Ozone Layer Announced by EPA; Actions Expected by 1987*, 9 Chem. Reg. Rep. (BNA) 1308 (Jan. 3, 1986).

45. *NRDC Sues to Require EPA to Issue Rules Limiting Emissions of Chlorofluorocarbons*, 15 Env't Rep. (BNA) 1384 (Dec. 14, 1984). Natural Resources Defense Council (NRDC) further stated that the rate of ozone depletion and severity of the health and environmental danger from ozone depletion may be much greater than previously predicted. *Id.*

46. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 1.

47. *Id.* at 9.

48. FORZIATE, *supra* note 14, at 54.

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epidemiological evidence of a direct correlation between DUV radiation and the historically observed incidence of several skin cancers in humans.[49]

Skin cancer, associated with exposure to DUV radiation, is a disease of concern in the United States.[50] Models predict that a one percent increase in DUV radiation will result in a two percent increase in skin cancers.[51] Thus a one percent decrease in ozone, which causes a two percent increase in DUV penetration, may result in a four percent increase in skin cancer.[52] The 1986 prediction of 4.9% to 9.4% ozone reduction[53] would mean a 19.6% to 37.6% increase in skin cancers. Additionally, adverse effects from increased DUV radiation may occur at the cell, organism, and ecosystem levels.[54] Possible effects include: (1) changes in physiological, biochemical, anatomical, and growth characteristics of certain plant species sensitive to DUV radiation, including some food crops; (2) disturbance in ecosystems; (3) effects on the behavior of insects, including some beneficial to agriculture; (4) effects on the stability and effectiveness of agricultural chemicals; (5) effects on livestock; and (6) reduction in the yield of some crops, especially in areas of marginal agricultural production.[55] In addition to human health effects and a disruption of Earth's ecosystem through the alteration of various plant and animal species, concern has been expressed that CFC emissions could affect the Earth's climate.[56]

B. Global Climatic Changes

Independent of stratospheric ozone depletion, CFC's could affect global temperatures if they reach sufficient concentrations. CFC's absorb thermal radiation that

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49. *See NRDC Sues to Require EPA to Issue Rules Limiting Emissions of Chlorofluorocarbons*, *supra* note 45. This proposition is strongly supported by the unequivocal induction of skin cancers in animals exposed to destructive ultra-violet (DUV) radiation. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 9.

50. FORZIATE, *supra* note 14, at 50. Malignant human skin tumors can be divided into three categories: Squamous cell carcinoma, which occurs frequently among Caucasians, but is generally not fatal if treated early. Basal cell carcinoma is a less serious, rarely fatal, but much more prevalent form of skin cancer that usually occurs on facial tissues and, if untreated, causes severe disfiguration. Malignant melanomas, though less prevalent than the above types, are frequently fatal. Malingant melanomas readily produce secondary tumors that spread to other parts of the body. From 39% to 65% of patients having this type of skin cancer die within five years after onset of the disease. SCOTT & STRAFF, ULTRAVIOLET RADIATION AS A CAUSE OF CANCER, IN ORIGINS OF HUMAN CANCER (H. Hiatt, J. Watson, and J. Winston eds. 1977). Because of the higher mortality from malignant melanomas, the number of deaths from them is comparable to the number from the more common but less fatal non-melanomas. FLUOROCARBON REGULATION, *supra* note 5, at 11.

51. FORZIATE, *supra* note 14, at 59. Estimates of the effect of increased intensity of DUV radiation on skin cancer incidence are complicated by many factors, including the proportion of fair skinned persons, regional climate, access to medical care, and life-style. FLUOROCARBON REGULATION, *supra* note 5, at 11. Some studies estimated an increase of two percent to five percent in the incidence of basal cell skin cancer for each one percent decrease in stratospheric ozone and double that increase in squamous cell cancer. *NAS Ozone Study Issued, Depletion Theory Examined, CFC Production Figures Disputed*, 6 Chem. Reg. Rep. (BNA) 5 (Apr. 2, 1982).

52. FORZIATE, *supra* note 14, at 54. Some studies have concluded that the relationship may be even stronger, as much as an eight percent increase in skin cancer for each one percent decrease in ozone. B. HOFFMAN & D. KLUDDER, FINAL ENVIRONMENTAL IMPACT STATEMENT, FLUOROCARBONS: ENVIRONMENTAL AND HEALTH IMPLICATIONS (1978).

53. *Increasing Levels of Chlorofluorocarbons is Changing Earth's Atmosphere*, 17 Env't Rep. (BNA) 204 (June 20, 1986).

54. FLUOROCARBON REGULATION, *supra* note 5, at 10.

55. Federal Task Force on Inadvertent Modification of the Stratosphere, *supra* note 1, at 10.

56. *Id.* at 1

would otherwise escape from Earth. This results in a warming of the Earth's surface, known as the greenhouse effect.[57]

Continued CFC releases at 1973 levels could, by the year 2000, produce about half of the direct climatic warming effects caused by a carbon dioxide increase over the same period.[58] As an indication of the potential greenhouse effect of CFC's, the addition of one molecule of either CFC–11 or CFC–12 to the atmosphere produces a greenhouse warming effect equivalent to that produced by more than 10,000 molecules of carbon dioxide.[59] Thus, small amounts of CFC's in the atmosphere correspond, in impact, to much greater amounts of carbon dioxide.[60]

The global warming trend projected by the scientific community is likely to cause migration of food-growing belts,[61] change monsoon patterns, and turn farmlands into deserts.[62] The warming trend is expected to cause sharp rises in sea and ocean levels due to melting of polar ice caps, which would result in flooding many coastal areas, increasing hurricane activity and storms, salt-water intrusion into supplies of fresh water, destruction of wildlife habitats, and the impairment of port facilities.[63] The risks of climatic change are so great that the problem of climatic variation must be recognized as potentially catastrophic.[64]

IV. CHLOROFLUOROCARBON PRODUCTION AND USE

Chlorofluorocarbons were developed around 1930 to overcome the flammability, toxicity, corrosiveness, and instability of ammonia, methyl chloride, ethyl chloride, sulfur dioxide, and carbon dioxide that were then in use for commercial and home refrigeration.[65] Early CFC's were nontoxic, very stable over long periods of time, and inert toward the electrical and mechanical components of refrigeration systems, and also had superior thermodynamic properties that enabled engineers to design

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57. FLUOROCARBON REGULATION, *supra* note 5, at 14. The direct climatic effects of CFC's occur because CFC's absorb and emit infrared radiation normally not absorbed by the atmosphere. The increased infrared radiation from the warmer troposphere heats the surface of the earth, giving rise to the greenhouse effect. FORZIATE, *supra* note 14, at 52.

58. Committee on Impacts of Stratospheric Change, National Research Council, National Academy of Sciences, Halocarbons: Environmental Effects of Chlorofluoromethane Release at 3 (1976).

59. *Increasing Levels of Chlorofluorocarbons is Changing Earth's Atmosphere*, *supra* note 53. Thermal radiation is emitted by the Earth. Normally this thermal radiation would escape out of the atmosphere, but certain molecules present in the atmosphere may absorb this thermal radiation and emit it, resulting in a climatic warming effect. Both CFC and carbon dioxide molecules are involved in this process, but CFC molecules are much more efficient at absorbing and emitting thermal radiation than are carbon dioxide molecules. FORZIATE, *supra* note 14, at 52. Other studies have noted that on a molecular basis, CFC's may even be 100,000 times more effective than carbon dioxide as contributors to the greenhouse effect. *Id.* at 53.

60. CHLOROFLUOROCARBONS, *supra* note 3, at 7.

61. Impacts upon U.S. agriculture from climatic changes are likely to be quite different from those felt in the rest of the world. If the release of CFC's continues to grow at the rate of ten percent annually until the year 2000, there will be little effect on corn and wheat production in the United States, but production will decline in the rest of the world. KELEJIAN & VAVRICHEK, *Pollution, Climate Change, and the Consequent Economic Cost Concerning Agricultural Production*, in CHLOROFLUOROCARBONS *supra* note 3, at 224–69.

62. *Institute on Climate Formed to Educate Public About Potential Threat*, *supra* note 40.

63. *Id.* The largest warming will be in the areas covered by sea ice. In the last century, global warming has contributed to a 30 centimeter rise in sea level along the U.S. Atlantic Coast. By the year 2000, the sea could rise another 70 centimeters, causing increased tidal flooding, wave-induced erosion, and salt-water intrusion into certain areas. If the projected three-to-five-foot rise occurs in the next century as a result of the greenhouse effect, it will almost certainly adversely affect most coastal ecosystems. *Senators, Scientists Urge Policy Shifts to Avert Problems from Atmospheric Changes*, *supra* note 39.

64. FLUOROCARBON REGULATION, *supra* note 5, at 14.

65. FORZIATE, *supra* note 14, at 40.

more efficient refrigeration systems.[66] As new CFC's with different boiling points, critical temperatures and pressures, and solvent characteristics were created, additional uses were developed by industry.[67]

Present CFC's are neither poisonous nor [illegible]mable. Inexpensive to produce, they are used as aerosol propellants,[68] refrigerants,[69] a[illegible]nts for foam blowing,[70] solvents,[71] and air conditioning, most notably of cars.[72] Military applications of CFC's abound, with solvent use, military parts production, and refrigeration units being heavily dependent upon CFC's.

A. United States Production, Use, and Demand

The demand for CFC's is likely to grow at a modest rate over the next fifteen years.[73] In the absence of restrictive policies, future CFC growth will reflect increased market developments for their use in the United States and in other developed nations, and the possible creation and growth of new markets.[74]

Almost all CFC emissions result from human activities. The point at which the emissions occur is dependent upon their production patterns and their uses.[75] In some applications, such as aerosol propellants, the chemicals are released directly into the atmosphere when the aerosol product is used. In other uses, such as in refrigeration units, the chemical is contained in a closed system and not emitted, except for minor leakage, until the product is discarded.[76] Because CFC's are gases at room temperature, virtually all CFC production will eventually translate into CFC emissions.[77]

The production of CFC's is highly competitive, because CFC products manufactured and sold by one firm are chemically identical to, and of essentially the same quality as, the products of its competitors.[78] The United States' share of the world production of CFC–11 and CFC–12 has fallen considerably over time, dropping from around seventy percent in 1960 to less than forty percent in the late 1970's,[79] to

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66. *Id.*
67. *Id.*
68. Now mostly banned in the United States and a few other countries.
69. In addition to CFC uses in air conditioning and refrigerators, CFC refrigerant use includes a diverse assortment of products, including dehumidifiers, freezers, icemakers and chillers. GLADIN, UGELOW & WALTER, *A Global View of CFC Sources and Policies to Reduce Emissions*, in CHLOROFLUOROCARBONS *supra* note 3, at 89.
70. Foam–blowing CFC uses include rigid forms (insulation and packaging) and flexible forms (furniture, bedding). CHLOROFLUOROCARBONS, *supra* note 3, at 5. Foam–blowing products range from hot-drink cups to packaging materials to padded upholstery. *Hooked on Chlorofluorocarbons*, The Wash. Post, Dec. 4, 1986, at A–22, col.1. CFC's, when used in urethane foam production, have the capability of producing low-density, relatively nonflammable, and excellent insulating products. GLADIN, UGELOW & WALTER, *supra* note 69, at 93.
71. *One-Third Reduction in Global Emissions Possible in Short Term, World Resources Institute Report Says*, *supra* note 43.
72. *Hooked on Chlorofluorocarbons*, *supra* note 70.
73. Camm, Hammitt, & Wolf, *supra* note 27, at 85.
74. Quinn, Wolf, Mooz, Hammitt, Chestnut, & Sorma, *Projected Used, Emissions, and Banks of potential Ozone-Depleting Substances* 1986 RAND CORP. NOTE NO. N–2282–EPA, 1986 at VII [hereinafter Quinn].
75. Camm, Hammitt, & Wolf, *supra* note 27, at 1.
76. *Id.* at 3. In cases like this, the sealed CFCs constitute a bank that may be released some time in the future, or possibly never. *Id.*
77. CHLOROFLUOROCARBONS, *supra* note 3, at 5.
78. GLADIN, UGELOW, & WALTER, *supra* note 69, at 85.
79. CHLOROFLUOROCARBONS, *supra* note 3, at 6.

ty percent in 1986.[80] However, the total retail value of CFC production, packaging, d distribution of CFC's in the United States has remained somewhat stable with a ail value of five to ten billion dollars annually, and a total related employment of proximately one million workers.[81]

Unilateral United States regulation of CFC's could shut down domestic produc- n and encourage the movement of CFC production capacity to nonregulating tions.[82] Among CFC users, producers of refrigeration units would be especially rd hit by a United States regulatory action.[83] A near-term unilateral ban on the use CFC–11 and CFC–12 for refrigerant use could cause disaster, from economic, ergy consumption, and human health and safety perspectives, and as such might e politically unacceptable.[84]

B. Substitutes and Alternative Use and Production Methods

Finding adequate substitutes for CFC's will be difficult and expensive. However, ere remains hope, because Environmental Protection Agency (EPA) studies have hown that there may be ways to limit CFC emissions, or to substitute different hemicals at modest additional cost.[85]

Product substitutes and alternative production and use methods exist for some FC users,[86] and it appears that commercially viable substitutes for CFC–11 and FC–12 may be on the developmental horizon.[87] DuPont Company has recently een awarded a patent for substitutes to CFC–11, CFC–12, and CFC–114, which are hemicals used as refrigerants and as foam–blowing agents. Allied-Signal, Inc. has developed a lubricant that will permit the use of a CFC substitute in automobile air conditioners.[88] While these technological advances are encouraging, it is important to remember that CFC's were originally developed to replace harmful and toxic chemicals; care must be taken to ensure that future CFC substitutes do not pose additional environmental problems.

C. International Production, Use, and Demand

The largest portion of the problem concerning CFC use and production is not the United States, but the rest of the world.[89] Overseas CFC emissions lead to depletion of the ozone layer, damage to public health, and environmental quality and climate changes in the United States as surely as do CFC emission in the United States.[90]

A few countries (the United States, Germany, France, Japan, Italy, Soviet Union,

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80. *Protocol on Protection of Ozone Layer May Require More time, Meeting Suggests*, 17 Env't Rep. (BNA) 1474 (Dec. 26, 1986).
81. *See* CHLOROFLUOROCARBONS, *supra* note 3, at 5.
82. *Id.* at 6.
83. *Id.*
84. GLADIN, UGELOW, & WALTER, *supra* note 69, at 92.
85. *See NRDC Sues to Require EPA to Issue Rules Limiting Emissions of Chlorofluorocarbons*, *supra* note 45.
86. *One-Third Reduction in Global Emissions Possible in Short Term, World Resources Institute Report Says*, *supra* 43.
87. Newly formulated CFC's that do not significantly contribute to ozone depletion are available, but have not yet been used widely due to their high cost. *Senators, Scientists Urge Policy shifts to Avert Problems from Atmospheric Changes*, *supra* note 39.
88. *Milestones Reached in Race to Develop CFC Substitutes*, 1 GREENHOUSE EFFECT REP. (BPI) 6 (Nov. 1988).
89. CHLOROFLUOROCARBONS, *supra* note 3, at 7.
90. GLADIN, UGELOW, & WALTER, *supra* note 69, at 103.

and the United Kingdom) produce and use ninty percent of the world's CFC's.[91] The countries of the European Economic Community (EEC) use approximately one-third of all CFC's.[92] Although production and use decisions by these countries and the EEC will have the greatest influence on regulating the use of CFC's,[93] other countries have an equal interest in protecting the stratosphere and their climate.

CFC emissions have more than doubled between 1974 and 1984.[94] These increased emissions have resulted from the large increase in demand in the nonaerosol areas, such as refrigerants, solvents, and blowing agents for rigid foams.[95] This demand is growing steadily and is expected too accelerate.[96] Without international controls and regulations, the emissions of CFC's will continue to increase at a rate of two-to-five percent annually.[97]

There presently exist, short of additional regulatory controls, several ways to reduce CFC emissions on a worldwide basis. Operating efficiencies can be increased to reduce CFC losses;[98] CFC's could be recovered and recycled;[99] different CFC formulations, which are less threatening to the ozone layer than CFC–11 and CFC–12, can be utilized;[100] and processes or products that require no CFC's could be used.[101] However, these changes would entail increased economic costs and job displacements resulting in political repercussions, and as such will not be instituted without the initiation of regulatory controls or economic incentives to encourage their implementation. Without regulation, CFC production and use will continue to increase in an attempt to improve global standards of living.[102]

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91. FLUOROCARBON REGULATION, *supra* note 5, at 3.

92. *Id.*

93. *Id.* A cap on CFC–11 and CFC–12 production capacity previously suggested in Europe could reduce CFC growth, but not in the immediate future as the European cap is set at 480,000 metric tons, and the current European CFC–11 and CFC–12 production is less than 250,000 metric tons. Quinn, *supra* note 74, at viii.

94. *Up to 9.4 Precent Ozone Depletion Predicted in United Nations Report*, 16 Env't Rep. (BNA) 1792 (Jan. 24, 1986). Accordingly to chemical manufacturers figures, issued late in 1985, annual releases of CFC–11 into the atmosphere increased from about 250 million kilograms in 1980 to about 271 million kilograms in 1984, while releases of CFC–12 rose from 332.5 million kilograms to 359.4 million kilograms. *Id.*

95. *Scientific Uncertainty Warrants Delay in CFC Regulation, EPA Tells Congress*, 7 Chem. Reg. Rep. (BNA) 456 (June 24, 1983).

96. *Id.*

97. *Curbs on Fossil Fuel, Immediate CFC Ban Would Slow Greenhouse Effect, Scientists Say*, 17 Env't Rep. (BNA) 1666 (Jan. 30, 1987).

98. *Global CFC Emissions Could be Reduced by One-Third in Short Term, World Resources Institute Report Says*, 17 Env't Rep. (BNA) 1303 (Dec. 5, 1986). With advances in equipment design, most air conditioners could use fewer CFC's. In addition, leakage, which represents a significant share of total CFC production, could be reduced. *Id.*

99. *Id.* Opportunities for reducing CFC emissions by recovering the compound and by cleaning the captured chemical for reuse are substantial, especially for CFC's used in degreasing and cleaning. Recapture and recovery of CFC's in flexible foams through carbon filtration can reduce operating losses by 50%. Similar techniques can halve emissions of CFC's used in manufacturing rigid foams. *Id.*

100. *Id.* Some CFC formulations present much less of a threat to the ozone layer. One substance that is commercially available is CFC–22, which degrades so rapidly in the atmosphere that it is only one-fifth as powerful as CFC–12 in depleting ozone. *Id.*

101. *Id.* These include hydrocarbons as propellants for aerosols, cardboard packaging as an alternative to rigid foams, and fiberglass and cellulose insulations made without CFC's. *Id.*

102. *See Chafee Calls for Actions on Pollutants that Threaten to Change Earth's Atmosphere*, 16 Env't Rep. (BNA) 2133 (Mar. 28, 1986).

V. UNITED STATES REGULATION OF CHLOROFLUOROCARBONS

A. Policy - To Regulate or Not

Scientific uncertainty is a fact of life with many hazardous substance issues, and that uncertainly presents a choice between two different risks. Postponing regulation until the scientific uncertainties are resolved exposes society to a potential health risk during the interim.[103] A decision to regulate a possibly hazardous substance, on the other hand, exposes society to an economic risk of last opportunity and diminished efficiency.[104] Neither decision can avoid risk completely.[105] Considering our present state of scientific knowledge and economic concern involving CFC's, it is becoming imperative that the United States seriously address the policy issue of whether further CFC regulation is now warranted.

B. Economic Considerations

Environmental economists and environmental policymakers have very different approaches to the task of setting environmental standards. The economists frequently stress the social welfare, function, which deals with pollution concentrations, factory supplies, and production technologies.[106] This is not always the way environmental policymakers approach the problem; they often impose standards in response to what they see as excessive pollution.[107] These environmental standards usually depend upon political and administrative pressures, together with the environmentalists' subjective evaluation of benefit-cost analyses and scientific assessments.[108]

Ultimately the decision to regulate CFC's depends on balancing the economic cost to society of regulation versus the health and environmental risk of not regulating.[109] Currently, the Government is required to show a reasonable basis for concluding that there may be an unacceptable risk before taking regulatory action.[110] This requirement is of dubious value when there exists the risk of possible major irreversible damage. The heavy economic cost of further regulation of CFC's may be preferable to the probability of major irreversible events, such as ozone shield damage or global climatic changes caused by CFC emissions.[111]

C. Political and Practical Considerations

Policy making is a political process.[112] Policymakers in the United States and elsewhere must determine whether the potential threat to the environment of CFC

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103. FLUOROCARBON REGULATION, *supra* note 5, at 24.

104. *Id.* Although the decision to regulate does not preclude further research and a change in policy if a substance is shown to be safe.

105. But when ignorance is very great, decisions are more than likely to be wrong. OLSEN, *Indivisibilities and Information Costs: A Conceptual Framework for Analyses of Policy on CFC Emission, and for Similar Problems*, in CHLOROFLUOROCARBONS, *supra* note 3, at 349.

106. CHLOROFLUOROCARBONS, *supra* note 3, at 483.

107. *Id.* at 484.

108. *Id.*

109. *See Decision Making for Regulating Chemicals in the Environment*, NATIONAL ACADEMY OF SCIENCES, 38–50 (1975) [hereinafter NAT'L ACAD. OF SCI.]

110. 15 U.S.C. §§ 2601–29 (1982).

111. CHLOROFLUOROCARBONS, *supra* note 2, at 10.

112. *See* NAT'L ACAD. OF SCI., *supra* note 109.

emissions into the atmosphere is large enough to warrant the costs of reducing their use.[113]

Regulatory options with small to moderate social costs in the United States were the first options to be employed when policymakers decided fully to regulate CFC emissions.[114] Implementing a decision further to regulate these CFC's depends partly on the existence of appropriate legislative authority. Further regulatory actions of CFC's could be implemented under legislation dealing with air pollution.

In determining which regulatory approach to adopt for control of CFC emissions, (EPA) has stated that it will consider the health effects, the social cost of regulation, and the feasibility of enforcement in selecting an appropriate approach.[115] CFC regulation will eventually be a politically acceptable compromise based upon the worldwide control of a material whose use in small quantities is helpful to mankind, but whose use in large quantities in unacceptable.[116]

D. Regulation, from the Past to the Present

On May 1977, regulations were proposed prohibiting the manufacturing, processing, and importation of CFC's for use in most aerosol products. The regulation of CFC's as aerosol propellants was accomplished under the Toxic Substances Control Act (TSCA)[117] and the Food, Drug, and Cosmetic Act.[118]

EPA found that technically feasible and economically acceptable alternatives existed for most propellant uses of CFC's. After considerable study, nonessential CFC-propelled aerosol products were determined to present an unreasonable risk of injury to health and the environment, and regulations to ban their use were proposed.[119] In 1978 the EPA, under TSCA, banned the use of CFC's as propellants in nonessential aerosol sprays.[120] Any future EPA regulation of nonaerosol uses of CFC's will be under the Clean Air Act (CAA), which specifically addresses the need for ozone protection.[121]

In 1980 the Carter Administration proposed freezing production for nonaerosol CFC uses.[122] EPA proposed a complex regulatory system to cap production of CFC's in response to nationwide concern about damage to stratospheric ozone.[123] However, extensive industry pressure made the Reagan Administration less inclined

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113. Camm, Quinn, Barnezais, Hammitt, Meltzer, Mooz, & Wolf, *Social Cost of Technical Control Options to Reduce the Use of Potential Ozone Depletions in the United States: An Update*, 1986 RAND CORP. NOTE NO. N–2440–EPA, at VII [hereinafter Camm].

114. Camm, *supra* note 113, at VII.

115. FLUOROCARBON REGULATION, *supra* note 5, at 320.

116. Committee on Impacts of Stratospheric Change, *supra* note 58, at 20.

117. Toxic Substance Control Act (TSCA), Pub. L. No. 94–469, 90 Stat. 2003, codified at 15 U.S.C.A. §§ 2601–29 (1982). Although Congress was aware of the CFC problem when it enacted TSCA, CFC's are not specifically mentioned.

118. 21 U.S.C. §§ 301–92 (1972).

119. FLUOROCARBON REGULATION, *supra* note 5, at 212.

120. While EPA imposed bans on nonessential aerosol propellant uses of CFC's under TSCA in 1978, the lack of scientific data and evidence of environmental effects led Environmental Protection Agency (EPA) policymakers to refrain from seeking a total ban on CFC use in all aerosol propellants. *Scientists to Study Antarctic Ozone*, 17 Env't Rep. (BNA) 271 (June 27, 1986).

121. 42 U.S.C. §§ 7453, 7457 (1983).

122. *Hooked on Chlorofluorocarbons*, *supra* note 70. CFC producers and manufacturers immediately protested, saying that it made no sense to limit production in the United States while production was not limited abroad. *Id.*

123. *Up to 9.4 Percent Ozone Depletion Predicted in United States Report*, *supra* note 94. EPA justified this proposed cap by stating that scientific evidence of CFC's destroying stratospheric ozone warranted the production limitations. *New Clean Air Bill Includes Language Restricting Further Non-Aerosol Rulemaking*, 5 Chem. Reg. Rep. (BNA) 1048 (Jan. 8, 1982).

toward rulemaking. The regulatory momentum that had caused CFC's to be targets for regulation in late 1980 seemed to be dying out by early 1982.[124] EPA, reacting to these pressures, decided to delay the decision on whether further to regulate CFC's until all comments on their October 1980 advance notice of rulemaking were evaluated and until the state-of-the-art studies on atmospheric damages from CFC's were submitted to EPA.[125]

On April 1, 1982, the long-awaited report was released. The report stressed that important discrepancies still existed between theoretical and observed effects of CFC's on upper atmosphere ozone.[126] While CFC's were still considered the most important man-made influence on ozone, the results of any ozone disturbances needed to be interpreted in light of the uncertainties and insufficiencies of current models.[127] The report indicated that because total observed ozone depletion from chemicals was less than one percent to date, and no detectable trend could be expected, there existed no hazard to the ozone layer that would call for immediate regulation.[128]

In June 1983, EPA told Congress that there existed no immediate plans further to regulate CFC's because significant gaps remained in understanding the relationship between CFC's and ozone depletion.[129] Any further EPA action was to be based on credible scientific evidence and sound economic analysis subject to rigorous peer review.[130] In October 1983, EPA announced the withdrawal of its proposed rulemaking in its regulatory agenda.[131]

On 27 November 1984, the NRDC filed suit in U.S. District Court in Washington D.C. to require EPA to protect the atmospheric layer of ozone from emissions of CFC's.[132] The NRDC citizen suit, brought under section 304 of the CAA, challenged the failure of the EPA Administrator to regulate CFC emissions in accordance with section 507 of the CAA.[133] NRDC alleged that, in October 1980, EPA had determined that the continued release of CFC's into the atmosphere posed a significant threat to human health and the environment and that the only sensible long-term strategy was substantial reduction of CFC emissions.[134] The complaint further alleged that EPA failed to fulfill its duty, in that after making the above finding, EPA had assumed a mandatory, nondiscretionary duty under section 157(b) of the CAA to promulgate regulations for the control of CFC's.[135] Finally, NRDC

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124. *Outlook for 1982: Toxic Substances, Pesticides Regulations to be Altered by Budget Cuts, Spirit of Cooperation with Industry*, 5 Chem. Reg. Rep. (BNA) 1089 (Jan. 15, 1982).
125. *Id.*
126. *NAS Ozone Study Issued, Depletion Theory Examined, CFC Product Figures Disputed*, *supra* note 51.
127. *Id.*
128. *Id.*
129. *Scientific Uncertainty Warrants Delay in CFC Regulation, EPA Tells Congress*, *supra* note 95. The report to Congress, required under the Clean Air Act, described agency progress on regulation to protect stratospheric ozone in the period February 1982 to April 1983. *Id.*
130. *Id.*
131. *EPA to Reconsider Production Rule in Light of New Data on Ozone Depletion*, 8 Chem. Reg. Rep. (BNA) 348 (June 22, 1984).
132. *NRDC Sues to Require EPA to Issue Rules Limiting Emissions of Chlorofluorocarbons*, *supra* note 45.
133. Natural Resources Defense Council, Inc. v. Ruckelshaus, No. 84-3587 (D.D.C. complaint filed Nov. 27, 1984).
134. *Id.*
135. *Id.*

contended that EPA had violated section 157(c) of the CAA; NRDC sought injunctive relief and a Writ of Mandamus.[136]

In December 1985 a consent decree was entered into by NRDC and EPA to settle the 1984 lawsuit brought by NRDC under the CAA.[137] As a result of the consent decree, EPA agreed to conduct research and participate in a series of conferences and workshops on the CFC emissions issue in order to obtain the additional technical information deemed necessary by EPA prior to making its regulatory decision.[138]

An increasing public awareness and concern over CFC regulation again started to manifest itself in political concern. Senator John H. Chafee (R-RI), on 23 March 1986, expressed concern that Congress and the United States as a whole must do a better job of anticipating and responding to today's warnings concerning depletion of stratospheric ozone before they become tomorrow's environmental tragedies.[139] EPA acknowledged the risks of stratospheric ozone depletion from CFC emissions,[140] going so far as to produce a risk assessment document that indicated that an eighty-five percent reduction in CFC emissions would be required to prevent increased ambient levels of CFC's and further destruction of stratospheric ozone.[141]

Having made the assumption that future CFC emissions will be controlled, the question arises as to what type of future controls must meet the economic and environmental needs of society, or in other words, what actions are politically viable. There exist four general policy strategies available for achieving CFC emissions control: (1) CFC bans; (2) voluntary actions to implement technological controls; (3) regulatory actions to implement technological controls; and (4) economic incentives, or disincentives, to increase the cost of using CFC's.[142]

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136. *Id.* The complaint seeks to require the Administrator of the EPA to regulate emissions of CFC's in accordance with section 157 of the CAA. In a 20-count complaint, NRDC alleged, among other things, the following: The Administrator is charged with the responsibility for regulating emissions of substances affecting the level of stratospheric ozone under section 157 of the CAA, 42 U.S.C. § 7457; section 157(b) of the CAA provides that the Administrator propose regulations for the control of any substance that in his judgment may reasonably be anticipated to affect the stratosphere, especially ozone in the stratosphere, if such effect on the stratosphere may reasonably be anticipated to endanger public health or welfare; that on October 7, 1980, the Administrator made a determination that the continued release of CFC's into the atmosphere posed a significant threat to the human health and environment, as evidenced by an Advanced Notice of Proposed Rulemaking issued on that date, 45 Fed. Reg. 66,726, in which EPA stated that continued emissions of CFC's are considered a significant threat to human health and the environment, and the only sensible long-term strategy was a substantial emissions reduction; as a result of this determination, the Administrator assumed a mandatory, nondiscretionary duty to promulgate regulations for control of CFC's; despite assurance to NRDC that EPA would act, and despite completion of studies on CFC's by NASA, NAS, and others, and reports by EPA to Congress in February 1982 and 1983, all of which confirmed the danger to human health and the environment from CFC emissions, the Administrator had proposed no regulation for the control of CFC's; NRDC is thus entitled to declaratory judgment that the Administrator was in violation of section 157(b) of the CAA, injunctive relief being appropriate under section 304(b)(2) of CAA to require the Administrator to propose regulation for the control of CFC emissions; and that the NRDC is entitled to a Writ of Mandamus under 28 U.S.C. § 1361 and section 304(b)(7) of the CAA, requiring the Administrator to promulgate proposed regulations in final form in accordance with section 157 (b) of the CAA.

137. *SAB Forms Panel to Review EPA Efforts Aimed at Protection of Earth's Ozone Layer*, 9 Chem. Reg. Rep. (BNA) 1503 (Feb. 7, 1986).

138. *Studies on Effects on Ozone Layer Announced by EPA; Actions Expected by 1987*, *supra* note 44.

139. Senator John H. Chafee (R-RI), Remarks made during speech in Medford, Mass. (Mar. 23, 1986) (available in 16 Env't Rep. (BNA) 2133 (Mar. 28, 1986)).

140. *Curbs on Fossil Fuel, Immediate CFC Ban Would Slow Greenhouse Effect, Scientists Say*, *supra* note 97.

141. *Id.*

142. Palmer, Mooz, Quinn, & Wolf, *Economic Implication of Regulating Nonaerosol Chlorofluorocarbon Emissions: of Regulating Nonaerosol Chlorofluorocarbon Emissions: An Executive Briefing* 1980 RAND CORP. REP. NO. R–2575–EPA, at 7 [hereinafter Palmer].

On 14 December 1987, EPA proposed regulations on stratospheric ozone protection.[143] These regulations became effective in part on 12 September 1988, and in part on 1 January 1989. The regulations set forth the United States' responsibilities as established in the Montreal Protocol on Substances that Deplete the Ozone.[144] The regulations restrict production and consumption of CFC–11, CFC–12, CFC–113, CFC–114, and CFC–115 on the basis of their relative ozone depletion "weights." These regulations require a production and use freeze at 1986 levels, followed in mid-1993 by a twenty percent reduction and in mid-1998 a fifty percent reduction, all based on 1986 data.[145] Further United States control of CFC emission may well be included in a reauthorized CAA. However, the road to passage and enactment of such a bill will be long and difficult,[146] and the degree of additional CFC controls that might result is unclear.[147]

Regardless of what additional future CFC control strategy is adopted by EPA or Congress, even the most stringent of the United States' policy options will have only very modest effects in reducing total worldwide emissions unless other countries also participate.[148]

VI. INTERNATIONAL REGULATION OF CHLOROFLUOROCARBONS

During the evolution of its policy on CFC-induced environmental deterioration, the United States decided that worldwide CFC control is appropriate.[149] The ozone layer and the climate are common property resources and public goods. However, in contrast to national public goods, these goods are dependent upon how all governments around the globe act to protect them.[150] As such the global public good derived from the protection of these assets should supersede any private national desires that adversely affect them. But in reality, no government will allow itself to be bound to accept the expressed values of other nations as a basis for determining its own national policies.[151]

Most countries concerned about the problem have already taken some action. Governments that perceive the problem to be less serious believe they have more justification for not acting.[152] But in reality, these countries seek to reap the benefits

143. 52 Fed. Reg. 47,488 (1987) (to be codified at 40 C.F.R. part 82).

144. The text of the sections Montreal Protocol is described in detail and printed in its entirety at 52 Fed. Reg. 47,488 (1987).

145. 40 C.F.R. §§ 82.4, 82.5, 82.6, 82.7 (1988); these regulations were promulgated under authority provided by section 157 of the Clean Air Act.

146. *Clean Air on Capitol Hill*, 2 *Air and Water Pollution Control*, No. 4, (BNA) 4 (Feb. 22, 1989).

147. *Id.*

148. Palmer, *supra* note 142, at 24.

149. GLADIN, UGELOW, & WALTER, *supra* note 69, at 109. The United States, a major producer and user of CFC's, and at the same time a leader in international CFC emission policy, must contribute to reducing international CFC emissions by taking a responsible position ... using this moral high ground to pull other countries along in the fight against ozone depletion and climate change. BOHN, *CFC Emissions Control in an Internal Perspective*, in CHLOROFLUOROCARBONS *supra* note 3, at 424.

150. BOHN, *supra* note 149, at 414–16. Everybody needs the protection of the Earth's ozone layer. But some, such as fair skinned people, need it more than others. Similarly, climate changes involve costs, and even if climate change brings benefits to some it imposes costs on others.

151. *Id.* The preferred outcome for each government would be to have all others at the bargaining table eliminate their CFC emissions, but to reduce their own CFC emission only to the extent that it is beneficial for their own country.

152. FLUOROCARBON REGULATION, *supra* note 5, at 32. These nations reason that because their own individual contribution to ozone depletion is small, they have no need to regulate their emissions. *Id.* at 33. However, as in the case of private sheep grazing on and destroying public British commons, similar reasoning by all nations may result in an intolerable harm to a common resource, in this case the ozone layer. *See* Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

of their own CFC production while sharing in the benefits of CFC regulation implemented by more cautious countries.[153]

A. Attempts at International Cooperation

In the absence of any supranational body that can impose and enforce regulatory requirements on nations without their consent, international cooperation is the most effective way of reducing CFC emissions.[154] In January 1984, the United States initiated a push for global action on the CFC emissions problem, taking the position that a global approach to the CFC problem was essential, because one country acting alone would be ineffective and would put itself at an economic disadvantage if it imposed a unilateral ban on CFC's.[155]

While taking the moral high ground that a global approach was necessary to deal effectively with a worldwide CFC emissions problem, and advocating a worldwide ban on nonessential CFC aerosol propellants, the United States may have been acting primarily in self interest. Its global position on CFC emissions was being used to blunt internal pressures for a unilateral ban on nonaerosol CFC emissions advocated by environmental groups. The United States' advocacy of a worldwide extension of its own ban on nonessential CFC propellants would make its industry more competitive worldwide, and would satisfy section 156 of the CAA that required it to enter into international agreements and develop international standards consistent with regulations applicable within the United States.[156]

Political pressure in European countries and Japan for governmental action to protect the Earth's ozone layer remains much less intense than political pressure in the United States,[157] because their environmental groups have not made the kind of impression made by their American counterparts.[158] Instead large foreign chemical companies, which have an important economic stake in any decision to limit or ban production of CFC's, have been the prime political advisors to their governments.[159] The Japanese position, more so than that of the EEC, is to look narrowly at the Japanese economic self interest.[160]

In September 1987 a significant step forward in the international control of CFC emissions was accomplished when the United States and several other nations signed the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol). Since that time additional countries have signed the Montreal Protocol and on 16 December 1988, it was ratified by the EEC, and individually by several of the EEC member nations.[161] On 1 January 1989, the Montreal Protocol entered into force.[162]

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153. FLUOROCARBON REGULATION, *supra* note 5, at 32.
154. *Id.*
155. *U.S. to Back Global Ban on Some Uses Over Industry Objections, Officials Say*, 7 Chem. Reg. Rep. (BNA) 1379 (Jan. 6, 1984).
156. *Id.*
157. *Proposed Ozone Laws Would Urge Treaty, Mandate Virtual Phaseout of CFC Production*, 17 Env't Rep. (BNA) 1796 (Feb. 20, 1987).
158. *Chemical Manufacturers in Europe, Japan Impede Action on Ozone Issue*, 17 Env't Rep. (BNA) 1828 (Feb. 27, 1987).
159. *Id.*
160. *Proposed Ozone Laws Would Urge Treaty, Mandate Virtual Phaseout of CFC Production*, *supra* note 157.
161. *Montreal Protocol Entered into Force*, 2 *Air and Water Pollution Control*, No. 1, (BNA) 1 (Jan. 11, 1989).
162. *Id.*

The Montreal Protocol requires its signatories, among other things, to restrict their production and consumption of CFC–11, –12, –113, –114, and –115. It mandates a phased reduction using 1986 production and consumption levels as base levels. CFC use and production will be frozen at 1986 levels starting 1 July 1989, with reductions to eighty percent and fifty percent of 1986 levels by 1993 and 1998, respectively. EPA estimates that compliance with the Montreal Protocol by most of the developed and developing nations would reduce ozone depletion by the year 2075 to 1.3%.[163]

To be effective the Montreal Protocol must be adhered to by the majority of the world's developing and developed countries. Herein lies the key to whether the Montreal Protocol will become merely another good intention on the way to a worldwide environmental disaster, or will be the first real step taken to preserve the stratospheric ozone layer: individual national compliance. For, just as within the United States, politically strong internal special interest groups worldwide can be expected to advocate strongly that their nations place what they perceive to be their own national interest above the interests of the world as a whole.

Already nations are questioning whether it is in their national interest to adhere to the Montreal Protocol requirements. During a March 1989 meeting in London, the Soviet Union hesitated on endorsing a proposal for a global ban of CFC's by the year 2000 and China demanded a special deal for the Third World.[164] While the Soviet Union agreed to abide by the Montreal Protocol, it stated that further scientific evidence is necessary to support a total ban. India described the Montreal Protocol as allowing developed countries to take care of their essential needs, but not allowing developing countries to meet their expanding needs.[165] These positions raise the spectre of perceived national interests being used to negate the requirements of the Montreal Protocol.

There is no legal international enforcement mechanism that requires individual countries to adhere to any international protocol, including the Montreal Protocol. Nations that are perceived as world leaders must take action within their own countries to address the CFC problem, then use their worldwide influence to encourage other nations to address responsibly their CFC emission problems. To this end the United States, in March 1989, joined the EEC in calling for a global ban of CFC's by the end of the century.[166] The Montreal Protocol signatories will meet in Helsinki in May 1989 to discuss whether such a global ban provision should be made part of the Montreal Protocol.

If the United States, or any other nation, feels strongly that further delay cannot be permitted in the areas of ozone layer depletion and climate protection, it may turn to various unilateral measures aimed at reducing CFC emissions overseas.[167] Unilateral measures could include import and export restrictions, territorial application of national laws, or the withholding of economic incentives from foreign governments that do not pursue an environmentally responsible CFC emissions control policy.[168] While such moves are likely to be highly controversial and unpopular both at home and abroad, these measures might ultimately be justified, because CFC

163. 53 Fed. Reg. 30,566 (1988).
164. *Soviets, Third World Countries Stall on Ozone Ban*, San Francisco Chron., Mar. 7, 1989, at A–12.
165. *Id.*
166. *Id.*
167. GLADIN, UGELOW, & WALTER, *supra* note 69, at 106.
168. *Id.*

emissions in foreign nations will eventually damage the public health and environment in the United States and everywhere else.[169]

During the evolution of its policy on CFC-induced environmental deterioration, the United States may decide that the encouragement of CFC-related activities overseas is inappropriate.[170] While the implementation of unilateral sanctions is bound to bring both domestic and foreign political repercussions, perhaps the time has come for a truly environmentally oriented United States foreign policy.[171]

VII. EFFECTS OF CFC REGULATION UPON THE USAF

The unilateral or multilateral regulation of CFC's will have a significant impact upon many United States Air Force operational and maintenance procedures. Decreases in operational effeciency and increase in procurement and operating costs should be anticipated.

Presently, the Air Force utilizes CFC's as solvents, refrigerants, foam–blowing agents for insulation and support, fire extinguishing agents, aerosols, and sterilants.[172] CFC usage in the production and cleaning of small sensitive electronic equipment is critical to the Air Force, as avionic gear in Air Force aircraft, military communication equipment, and large computers require CFC solvents for their production and maintenance. The regulation of CFC's may require electronic equipment to be redesigned, and, without the development of suitable CFC substitutes, may result in electronic equipment being two-and-a-half to three times larger than its present size.[173] Any CFC substitutes will be substantially more expensive than current CFC's.[174] Without the early development of inexpensive and effective CFC substitutes, CFC regulation can be expected to have significant adverse impacts upon future Air Force procurement and operational capabilities.[175]

VIII. CHLOROFLUOROCARBONS AND NATIONAL SECURITY

A military threat is only one of many threats to national security. National security means more than safety from hostile attack; it involves the preservation of a system of civilization.[176]

National security cannot be maintained unless national economics can be sustained.[177] National economics are subject to both external and internal pressures.

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169. *Id.* at 107.
170. GLADIN, UGELOW, & WALTER, *supra* note 69, at 109.
171. *Id.*
172. *The Effects of Chlorofluorocarbons on Stratospheric Ozone, Health Effects of Ozone Depletion, and Substitutes for Ozone Depleting Chemicals; Joint Hearings Before the Subcomm. on Environmental Protection and Hazardous Wastes and Toxic Substances of the Committee on Environmental and Public Works*, 100th Cong., 1st Sess. (May 12, 13, 14 1987) (statement of Eileen Clausen, Director, Office of Program Development, U.S. EPA.).
173. *Id.* (Statement of Richard Pavek, President, Tech Spray).
174. *Id.* (Statement of Neil Ganser, President, Neil Ganser, Inc., On Behalf of The Society of the Plastics Industry, Inc.).
175. The United States Air Force has recognized the impending impacts of CFC regulation on operations and procurement. Absent new technological developments, the Air Force has determined that the only feasible way to reduce Air Force dependence on regulated CFC's is to limit new equipment to unregulated CFC's where possible and replace existing inventory with equipment designed for unregulated CFC's as existing equipment fails. Engineering Technical letter 88–8: Chlorofluorocarbon limitations in Heating, Ventilating and Air-conditioning systems, Headquarters United States Air Force, Environmental Division (LEEE) Oct. 4, 1988.
176. Huddle, *The Evolving National Policy for Materials*, SCIENCE, 20 Feb. 1976.
177. L. BROWN, WORLDWATCH PAPER 14, REDEFINING SECURITY 6 (Oct. 1977).

Unilateral United States regulation of CFC usage and production will adversely affect the United States' economy due to the increased cost, but less efficient use, of CFC substitutes. International multilateral regulation will alter the economic stability of many countries by limiting or prohibiting the production of the CFC's now necessary for the economic development of these countries. Economic changes, whether internal or external, foster political instability, which impacts national security.[178]

Deterioration of the Earth's biological systems is a threat to the security of nations everywhere.[179] Global climatic instability can sharply reduce a nation's food supply and adversely effect the health of its population. Alternation of a nation's environment changes the very way of life of that nation's people. Unfortunately, most man-induced environmental changes result in impacts adverse to man. The CFC environmental threat to nations and to their security will continue to grow more formidable. If a sound global environmental policy cannot be established, the hope for long-term national security is bleak.[180]

The needs of national security must be addressed, whether the threat to security arises from a political foe or a deteriorating natural environment. Environmental changes will occur. The Air Force must be able to accommodate these changes if it is to continue in its role of preserving national security.

IX. CONCLUSION

Continued release of CFC's may be associated with heavy real costs in the form of deaths, illnesses and damage to materials, with possibly much greater costs resulting from CFC-induced effects on climate and ecology.[181] The issue is how much cost is justified to prevent or mitigate these potential CFC-induced damages.

Stronger efforts to control CFC emissions will be costly, but failure to institute necessary control mechanisms could turn out to be even more costly. Vigorous efforts must be made to provide the public with information concerning CFC emission and the resulting probabilities of serious future health and environmental dangers.[182] Regulation of CFC's, after all is considered, remains a political question that public awareness and concern greatly influences. Increased public concern will result in higher governmental priority for CFC emissions on both the national and international level.[183] In circular fashion, a higher governmental priority leads to more public awareness, which leads to more political concern; this brings more information to bear on the issue by diverse interest groups. Increased information in turn should aid the policymakers to make informed and intelligent decisions.

At present, there remain enormous problems. Environmental groups want faster action; industry warns against large expenditures before the risks are fully defined;[184] and third world countries want special incentives. But the movement is in the right direction, albeit rather slowly. On the international front, industry and environmental groups both believe that the Montreal Protocol is an effective agreement to limit

178. *Id.*
179. *Id* at 7.
180. *Id* at 4.
181. CHLOROFLUOROCARBONS, *supra* note 3, at 33.
182. Committee on Impacts of Stratospheric Change, *supra* note 58, at 9.
183. *Id.*
184. *Hooked on Chlorofluorocarbons*, *supra* note 70.

CFC production and emissions. On the national front, CFC regulatory control has been implemented in the United States.

Public and industry acceptance of additional CFC regulations may not be so easily received. Nevertheless, the ground work for acceptance has been laid. If there is continued scientific consensus on the importance of the problem, communication of the problem to the public, and diligence in seeking an appropriate statutory and regulatory scheme, there is every reason to believe that future CFC control will be as successful as past regulation.[185] For a large environmental issue such as CFC regulation, the mere possibility of success is, in itself, reason for optimism.

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185. FLUOROCARBON REGULATION, *supra* note 5, at 233.

The Incredible, Elastic Yardstick Measuring Compliance With Wastewater Discharge Standards

MAJOR RICHARD A. PHELPS, USAF

One side will make you grow taller, and the other side will make you grow shorter.
- The Caterpillar to Alice

Which is which?
- Alice to the Caterpillar

I. INTRODUCTION

Congress manifested its determination to cleanup the nation's waterways by declaring "the discharge of any *pollutant* by any person"[1] to be unlawful. Through extensive amendment, reorganization and expansion of the Federal Water Pollution Prevention and Control Act.[2] Congress completely transformed a largely state-based system of standards and enforcement into a centralized, federally supervised mandate to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters.[3]

To achieve that goal, the legislation (better known as the Clean Water Act)[4] directed states to establish, and review at least every three years, "designated uses" of all navigable waters within the state, and water quality standards for those waters based on the designated uses.[5] At the same time, however, Congress granted the Environmental Protection Agency (EPA) sweeping oversight powers, including both veto power over state water quality standards and the authority to independently set standards.[6]

The Clean Water Act (the Act) also directed EPA to establish effluent limitations for a list of specific toxic pollutants.[7] That list was subject to revision and at least triennial review by the EPA, which could add or remove "any pollutant," taking into account the "toxicity of the pollutant, its persistence, degradability, the usual or potential presence of the affected organisms in any waters, the importance of the

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1. 33 U.S.C. § 1311(a) (emphasis added); *but see*, NWF v. Gorsuch, 693 F.2d 156 (D.C. Cir. 1982) upholding application of the definition of "pollutant" in 33 U.S.C. § 1362(6) for purposes of regulation under the National Pollutant Discharge Elimination System.
2. 33 U.S.C. § 1251–1376.
3. Water Pollution Prevention and Control Act, 33 U.S.C. § 1251(a) (1972).
4. The Water Pollution Prevention and Control Act was amended and passed as the Clean Water Act of 1977, Pub.L. No. 95–217, § 1.
5. 33 U.S.C § 1313.
6. *Id.* at § 1313(c)(4).
7. *Id.* at §§ 1312, 1317(a) and 1362 (11).

affected organisms, and the nature and extent of the effect of the toxic pollutant on such organisms,"[8] plus whatever the EPA considers to be "an ample margin of safety."[9] The only limitation on the EPA in adding to the list was that their action not be "arbitrary or capricious."[10]

Setting discharge standards for the toxic pollutants was also made the responsibility of the EPA.[11] Effluent limitations would be a result of the application of "the best available technology economically achievable."[12] Each such standard is subject to extensive public review and comment, and ultimately judicial review of whether it is "based on substantial evidence."[13]

Compliance with these effluent limitations would be measured by test procedures established by the EPA.[14] Unlike the establishment of effluent standards, test procedures were not made subject to specific statutory requirements or public review.

A system of issuing permits to discharge effluents referred to as the National Pollutant Discharge Elimination System (NPDES) was established to police compliance with the new effluent standards.[15] In addition to providing for the permitting of discharges by publicly owned wastewater treatment facilities, the system also allowed for states to regulate discharges by "industrial users" into a publicly owned treatment works.[16] That regulation would be in terms of compliance with pretreatment standards promulgated by EPA for pollutants "which are determined not to be susceptible to treatment" or "which would interfere with the operation of such treatment works."[17]

Finally, the Act provides for civil penalties of up to $10,000 per violation per day, and criminal penalties including two–years imprisonment and a fine of $50,000 per violation per day.[18]

In furtherance of this mandate, the EPA has published voluminous regulations implementing the various aspects of the Act. The list of toxic pollutants has been expanded,[19] the NPDES and pretreatment programs detailed,[20] and approved test procedures established.[21] In effect, the EPA "fleshed-out" the congressional mandate of the Act through thousands of pages of regulations.

The result of that regulation has been, for the most part, a relatively consistent, measurable effort to protect the nation's waters. However, on occasion the best of intentions go awry. The purpose of this article is to highlight three areas of existing regulation where that desire to protect the environment has outreached common sense, and which carry the potential for grave impact on the operations of American military installations.

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8. *Id.* at § 1317(a)(1).
9. *Id.* at § 1317(a)(4).
10. *Id.* at § 1317(a)(1).
11. *Id.* at § 1317(a)(2).
12. *Id.*
13. *Id.*
14. *Id.* at § 1314(h).
15. *Id.* at § 1342.
16. *Id.* at § 1342(b)(2)(B)(9).
17. *Id.* at § 1342(b)(1).
18. *Id.* at § 1319(c) and (d).
19. 40 C.F.R. § 401.15.
20. 40 C.F.R. pts. 122 (1987) and 403 (1986).
21. 40 C.F.R. pts. 136 (1987).

II. The Combined Wastewater Formula

Part of the EPA's "fleshing-out" of the Act included creation of the "combined wastewater formula."[22] Because only industrial (nondomestic) discharges are regulated under the Act's pretreatment standards, application of this formula is required "where process effluent is mixed prior to treatment with wastewaters other than those generated by the regulated process."[23] The formula purports to eliminate from consideration the dilution effect of nonregulated effluent in establishing effluent standards for a regulated industrial discharge. In essence, if a combined wastestream includes only fifty percent regulated industrial effluent, constituent limitations would be adjusted downward. Thus, a fifty parts per million (ppm)[24] discharge standard would be adjusted to twenty-five ppm.

On its face, the concept of measuring toxicity only of that portion of the wastestream that represents regulated industrial discharge is appealing. When a wastestream includes both domestic and nondomestic sources, it makes sense that the dilution effect of the nonregulated domestic effluent would be subtracted in determining actual concentrations of pollutants in the industrial effluent. Unfortunately, that apparent logic is but a facade that is all too easily peeled away, creating the potential for discharge violations where none existed otherwise.

When the dilution effect of the nonregulated effluent is subtracted mathematically, any regulated constituents in that effluent, nonetheless, remain for detection, and are indiscernible from similar constituents present in the industrial portion of the wastestream. The result is both the regulation of theoretically nonregulatable domestic effluent, and the artificial concentration of constituents.

As an example of the foregoing, consider an aircraft maintenance hangar. Such a building will generally include work areas, a large open floor area, office space, and restrooms. Maintenance work will include the use of solvents and other products containing hazardous materials that are maintained in a closed system. When used, such products are captured, reused until no longer effective, and ultimately placed in containers and processed for disposal as a hazardous waste. Nevertheless, the possibility exists that some of these products could reach hangar floor drains to the sanitary sewer. Likewise, some of these products could reach the sanitary sewer via the restroom sink when aircraft maintenance people wash their hands. In addition, maintenance people will use general cleaning products on aircraft parts, equipment, the building and the hangar floor. Similar products will also be used in the restroom for personal hygiene. The effluent from the hangar floor drain is a regulated industrial discharge; however, the effluent from the restroom is a nonregulated domestic source.[25] The effluents from the hangar floor drain, and restroom sink, and toilet drains combine in the sanitary sewer line beneath the building, and will be intermixed at the first point at which the effluent could be measured, assumed in this example to be a manhole several yards from the building.

For the purposes of this example, further assume that the solvent being used is a carbon remover containing methylene chloride, one of the listed toxic pollutants,[26] and that the general cleaning product used is of the household variety and contains phenolic compounds. Also assume that the sanitary sewer discharges to a publicly

22. 40 C.F.R. § 403.6(e).
23. *Id.*
24. Also denominated mg/1, or milligrams per liter.
25. *See* 40 C.F.R. §§ 403.1(b) and 403.5(a).
26. 40 C.F.R. § 401.15.

owned treatment works, and that the wastewater discharge permit limits discharges of methylene chloride to "none detected,"[27] and discharges of phenol to fifty ppm.

If no regulated pollutants are discharged via the restroom, the combined wastewater formula quite appropriately discounts the diluting effect of that source in determining whether the nondomestic portion of the discharge is in compliance.

However, assume that a maintenance worker has had some incidental skin contact with the solvent. Perhaps a few drops splashed on his arm, notwithstanding the protective clothing worn while using the solvent. Unaware of the contact, the worker later uses the restroom sink to wash his hands. As a result, trace amounts of methylene chloride are discharged from this domestic source into the wastestream. At the point of compliance (in this case, the manhole), the effluent is measured and the regulated constituent detected. The result is noncompliance with the discharge standards.

Similarly, if the general cleaning product is used exclusively to clean fixtures in the restroom, its phenolic constituents will be discharged to the wastestream and measured as part of the industrial discharge. Finally, if the general cleaning product is used both in the industrial area and in the bathroom, the quantity discharged via the domestic source will be effectively added to that present in the industrial effluent for a regulated total quantity in the industrial wastestream. In each case violations of industrial discharge standards could occur as a result of contaminants contained in domestic, nonregulated, effluent. In short, when the combined wastewater formula is applied subtracting the volume, though not the regulated constituents, of nonregulated wastewater, the source of the regulated constituent is presumed to be the regulated process.

Sixteen petitioners unsuccessfully attacked the combined wastewater formula on this and other grounds in *National Association of Metal Finishers v. EPA*.[28] While holding that "the issues raised by petitioners [were] not ripe for review,"[29] the court reiterated the presumption of regularity accorded to an agency's regulations:

> Under section 10(e) of the Administrative Procedure Act, we may not invalidate agency actions unless we find them to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." This standard sets the level of deference with which [we must] review the agency's actions for their statutory authority, substantive validity and procedural regularity.[30]

At present, the combined wastewater formula, with all its inherent unfairness, is alive and well.

III. NARRATIVE STANDARDS

Discharge standards are established through a combination of regulations[31] promulgating both the Act[32] and the National Pollutant Discharge Elimination System (NPDES) Program.[33] Through a combination of pretreatment regulations and dis-

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27. By definition, such a limit changes whenever the advent of new technology makes it possible to detect toxic substances in ever decreasing amounts.
28. 719 F.2d 624 (3d Cir. 1983).
29. *Id.* at 654.
30. *Id.* at 636–37, citing P. 5 U.S.C. § 706(2)(A) (1976), and Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1024 (D.C.Cir. 1978).
31. 40 C.F.R. §§ 122–36 and §§ 401–71.
32. 33 U.S.C. §§ 1251–1387.
33. 33 U.S.C. § 1342.

charge standards,[34] a web of effluent constituent limitations is woven. As one would expect, those limitations are generally expressed in specific numeric quantity limits for specific constituents.[35] For example, a discharge permit could include an effluent limitation of fifty milligrams per liter (mg/L) phenol. However, other limits, generally referred to as "narrative standards," are also applied to nondomestic effluent. These limits are the antithesis of the identifiable, quantifiable, and measurably attainable numeric standards.

Narrative standards have their foundation in the rather sweeping language of the Act to "prevent the discharge of any pollutant into [publicly owned] treatment works, [that] may *interfere with, pass through, or otherwise be incompatible with* such works."[36] As applied by the EPA to national pretreatment standards,[37] "prohibited discharges" include pollutants that "1. would *pass through* the publicly owned treatment works (POTW). 2. would *interfere* with the operation or performance of the POTW. 3. create a fire or explosion *hazard* in the POTW, and 4. will cause *corrosive* structural damage to the POTW."[38]

From the perspective of a prosecutor acquainted with the necessity of proving the existence or nonexistence of a fact to a relatively high degree of certainty, these standards appear astoundingly vague. To a bioenvironmental engineer intimately familiar with precision testing for pollutants, such unquantifiable standards present uniquely frustrating, ethereal goals. However, the environmental coordinator is perhaps the most frustrated of the base environmental trio: charged with managing base-wide environmental compliance, these "narrative standards" provide him a yardstick without lines.

The regulatory definitions of what exactly is an "interference" or a "pass through" have undergone substantial changes over the years. For example, as originally promulgated in 1978, "interference" was defined in extraordinarily general terms as "an inhibition or disruption of a POTW's sewer system, treatment processes or operations which *contributes* to a violation of any requirement of [the POTW's] NPDES permit."[39] In an apparent effort to narrow the scope of the standard, a 1979 proposed modification would have categorized as an "interference" an "inhibition or disruption . . . which *causes or significantly contributes*" to the violation of the POTW's permit.[40] The proposal also included a "safe harbor" provision exempting inhibitions and disruptions caused by an indirect discharger "in compliance with specific prohibitions or standards developed by Federal, State or local governments."[41]

As promulgated, however, the 1981 general pretreatment amendments omitted the safe harbor provision and defined "significantly contributes" using three numbered categories.[42] "Interference" was thus defined as:

> [a]n inhibition or disruption of the POTW . . . which is a *cause of or significantly contributes to* either a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or to the prevention of sewage sludge use or disposal by the

34. 40 C.F.R. §§ 122.44 and 403.5(c).
35. 40 C.F.R. §§ 122.44 and 403.5(c).
36. 33 U.S.C. § 1317(c) (emphasis added).
37. 40 C.F.R. § 403.5(a) and (b).
38. *Id.* (emphasis added).
39. 43 Fed. Reg. 27,747 (1987) (emphasis added).
40. 44 Fed. Reg. 62,260, 62,265 (1979).
41. *Id.*
42. 46 Fed. Reg. 9413 (1981).

> POTW . . . . An industrial user significantly contributes to such a permit violation or prevention of sludge use or disposal . . . whenever such user:
>
> (1) Discharges a daily pollutant loading in excess of that allowed by contract with the POTW or by Federal, State or local law;
>
> (2) Discharges wastewater which substantially differs in nature or constituents from the User's average discharge; or
>
> (3) Knows or has reason to know that its discharge, alone or in conjunction with discharges from other sources, would result in a POTW permit violation or prevent sewage use or disposal . . . .[43]

More recently the definition of "interference" was the subject of rather detailed examination by the Third Circuit Court of Appeals in *National Association of Metal Finishers v. EPA*.[44] Rejecting assertions by the EPA that the definition implicitly requires causation before liability can be established, the court found that, as written, "the definition fails to require such causation, and thus violates the clear meaning of the [Clean Water] Act.[45] The court concluded "that given the language and purpose of the [Clean Water] Act, an indirect discharge cannot be liable under the prohibited discharge standard unless it is a cause of the POTW's permit violation or sludge problem."[46] As a result of that decision, the EPA's definitions of "interference" and "pass through" were suspended.[47]

In response to the causation problems highlighted in *National Association of Metal Finishers*, the EPA codified a revised definition of "interference" in 1988. The concept of "significant contribution" was abandoned in favor of a clear causation requirement. Now to be an "interference," a discharge must "*cause* . . . a violation of [a] requirement of the POTW's NPDES permit . . . ."[48]

The other categories of narrative standards (fire or explosive hazard and corrosion) have not similarly been the subject of either regulatory or judicial definition. The standards are, therefore, left to interpretation by states, localities, POTW's and affected parties.[49] However, because these spring from the same statutory source as "interference" and "pass through,"[50] we have the "causation" legacy of *National Association of Metal Finishers* as an aid in forming our interpretation.

IV. NUMERIC STANDARDS AND REPRODUCIBILITY

The common thread of the two areas discussed above has been the lack of objective criterion against which to measure compliance. It would seem, therefore, the establishment of a set, quantifiable wastewater discharge standard for a given pollutant would be the sought-after solution to the compliance measurement problem. However, this is not necessarily so.

Compliance with numeric discharge standards is generally measured using EPA-approved test procedures.[51] Indeed, use of the approved test procedure for a given constituent is mandated for POTW's and any other entity that discharge pursuant to a

43. 40 C.F.R. § 403.3(i) (1982).
44. 719 F.2d 624 (3d Cir. 1983).
45. 33 U.S.C. §§ 1251–1376.
46. 719 F.2d 624, 640–41 (3d Cir. 1983).
47. 49 Fed. Reg. 5132 (1984).
48. 40 C.F.R. § 403.3(n) (1988).
49. 719 F.2d 624 (3d Cir. 1983).
50. 33 U.S.C. § 1317(b)(1).
51. 40 C.F.R. § 136.

NPDES permit,[52] unless the EPA approves an alternate test procedure.[53] The EPA has published approved test procedures for listed biological, inorganic, nonpesticide organic, pesticide, and radiological materials.[54]

Of course, for these tests to be effective and enforceable, tools for environmental protection each must garner results that are both reliable and reproducible.[55] Although the "EPA's choice of analytical [test] methodology is entitled to a presumption of regularity,"[56] reliability and reproducibility should not be presumed.

One example is EPA text method 420.1,[57] the approved methodology for detection of inorganic phenols.[58] The process is extremely simple, and somewhat reminiscent of high school chemistry experiments. The sample is boiled, and escaping gases or vapors are trapped and funneled into a condenser where they are cooled to reform a liquid. A color-forming reagent is then added, and the intensity of the resulting color (usually red) is measured with a spectrometer. The darker the solution, the greater the concentration of phenols.[59]

As an example, consider discharges from wastewater treatment facilities (POTW's) operated by Pima County, Arizona, are regulated by NPDES permits issued by EPA.[60] The county is subject to a limit for "phenols," which the permits require be measured by method 420.1.[61] As part of its pretreatment program, the county, in turn, has limited by permit industrial discharges of phenols to its system, and also mandated use of method 420.1. Beginning in January 1985, industrial wastewater discharges from Davis-Monthan Air Force Base, Arizona, have been subject to permitting by Pima County.[62]

From the outset, Davis-Monthan found itself not in compliance with phenol discharge limits as measured by EPA method 420.1. A tremendous effort ensued to identify potential sources of phenols in the wastewater. Sources of phenols were identified (generally cleaning products) and eliminated.[63] Yet, even though the amounts detected were reduced, the problem persisted.[64] Finally, a general ban on all cleaning products not demonstrated to contain less than one ppm phenols was issued by the senior host commander for the base's industrial areas.[65] When prob-

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52. *Id.* at § 136.1.
53. *Id.* at § 136.5.
54. *Id.* at pt. 136, tables 1A-1E.
55. United States v. Chevron Oil, 583 F.2d 1357 (5th Cir. 1978).
56. American Petroleum Institute v. EPA, 787 F.2d 965, 983 (5th Cir. 1986), citing United States v. Chevron Oil, 583 F.2d 1357 (5th Cir. 1978).
57. In promulgating 420.1, the EPA adopted the analytical method for detection of phenols published in STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER 556–70 (A. Greenberg, R. Trussell & L. Clesceri 16 ed. 1985).
58. 40 C.F.R. § 136.3, table 1B, #48.
59. *See supra* note 57.
60. Authorization to Discharge Under the National Pollutant Discharge Elimination System. Pima County Wastewater Management Department, Ina Road Wastewater Treatment Plant, NPDES Permit No. AZ0020001 (Apr. 21, 1987).
61. *Id.*
62. Industrial Wastewater Discharge Permit, Davis-Monthan Air Force Base, Permit Nos. 2R 10760, 2R 10761.
63. *See, e.g.*, Letter from Brigadier General Ronald R. Fogleman, 836 Air Division Commander, to Contracting, Maintenance and Engineering Activities, Davis-Monthan Air Force Base (Aug. 19, 1985) (Ban on Use of Paint Strippers Containing Phenols), and Letter from Brigadier General Lester P. Brown, Jr., 836 Air Division Commander, to Senior Commanders, Davis-Monthan Air Force Base (Oct. 30, 1986)(Ban on Use of Phenolic Aircraft Soaps and Pine Oil).
64. *See, e.g.*, Letter from 836 CSG/DE, Davis-Monthan Air Force Base, to HQ TAC/DE (Feb. 13, 1987)(Requested Guidance on Wastewater Compliance Program).
65. Letter from Brigadier General Lester P. Brown, Jr., 836 Air Division Commander, Davis-Monthan Air Force Base, to Commanders, All Assigned and Attached Units (May 15, 1987)(General Order - Ban on Use of Cleaning Products Containing High Levels of Phenols).

lems continued, suspicion turned away from the possible existence of some heretofore unidentified phenol source, and focused on the test on which violations of the discharge standard were based, specifically, method 420.1

That suspicion generated a five-week split-sampling experiment conducted by the base Bioenvironmental Engineer.[66] The experiment had two purposes: to establish whether 420.1 resulted in variances in result between laboratories, and to establish whether variances existed in 420.1 results within a laboratory.

Twenty-four hour twelve-liter composite samples[67] were collected, then split into twelve one-liter bottles. Three of these samples were randomly selected and sent to each of four EPA-certified laboratories for analysis. In short, each laboratory received identical one-liter portions of the twelve-liter composite sample. The experiment was repeated twelve times over a five-week period for a total of 144 samples.

The results were nothing short of astounding. Variances of as much as 6500% were found for identical samples tested by the same laboratory. There was an average variance of forty-seven percent from laboratory to laboratory.[68]

In addition to being demonstrably inaccurate, EPA method 420.1 suffers from another, quite significant failing. Of the existing universe of phenols and phenolic compounds, eleven have been identified by the EPA as priority toxic pollutants.[69] Of these eleven pollutants nine cannot be reliably detected by method 420.1.[70] Additionally, 420.1 has given erroneously positive (so-called false positive) results for such substances as citrus juice, vanillin milk, urine, and barbiturates.[71]

In *United States v. Chevron Oil*,[72] plaintiffs challenged the validity of an EPA-approved test method for the detection of oil. Noting that the test was the subject of "354 separate observations [on] 54 samples of drilling muds and cuttings," the court found that:

> The results of these tests demonstrate that the test method is *reliable and reproducible*. Not one single false positive observation was made of samples with no added oil. There was almost complete reproducibility among all the samples which were of sufficient size to meet Region 10 guidelines, and where there was a variance, it indicated the presence of trace amounts of free oil that were near the limit of detectability. Significantly, from the discharger's standpoint, these variances did not result in a false positive result.[73]

The standard for judicial acceptance of a test to detect pollutants would seem, therefore, to be reliability (lack of false positives—or false negatives, for that matter) and reproducibility (consistency of result). Applied to EPA method 420.1 as used to detect phenols, clearly neither standard is met. When presented with this information, Pima County joined Davis-Monthan AFB in petitioning EPA to allow

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66. Testimony of First Lieutenant Paul Legendre, Davis-Monthan Air Force Base Bioenvironmental Engineer, Public Hearing re: Pima County's Petition for Exception filed with the Arizona State Department of Environmental Quality (Nov. 9, 1988).

67. Occasionally grab samples were used rather than composite to determine whether variances would change at a lower concentration.

68. *Supra* note 66.

69. 40 C.F.R. § 403, App. B.

70. Testimony of Dr. Barbara Erickson, Organic Chemistry Specialist for Pima County Wastewater Management, and of Janelle Kennedy, Chemist for Pima County Wastewater Management. Public Hearing re: Pima County's Petition for Exception filed with the Arizona State Department of Environmental Quality (Nov. 9, 1988).

71. *Id.*

72. 583 F.2d 1357 (5th Cir. 1978).

73. American Petroleum Institute v. EPA, 787 F.2d 965, 983 (5th Cir. 1988).

the use of the demonstrably accurate gas chromatographic method 604[74] rather than 420.1.[75]

Questionable accuracy of result is not limited to decades-old test methods. In 1984, the EPA issued its policy entitled "Development of Water Quality Based Permit Limitations for Toxic Pollutants."[76] Since then the EPA has added "biomonitoring" as a permit limitation of over a thousand NPDES permits.[77] The laudable goal of this methodology is to detect toxic substance in effluent that are missed by conventional quantifiable testing, as well as toxic combinations of substances discharged in permitted amounts.[78] To help achieve this goal biomonitoring can be used as a control technique to generate information used in determining the necessity of toxicity reduction actions. However, when biomonitoring results become a basis for issuing a permit violation, rather than an information tool, the test's reliability and reproducibility come into question.

The biomonitoring procedure requires that undiluted effluent be piped through a tank containing a known number of fish.[79] After a set period of time, which depends on the species of fish selected (e.g., forty-eight hours for daphnia), the number of dead fish is counted. When applied as a condition of permit compliance, a survival rate of less than a stated percentage (e.g., ten percent) is a permit violation, thereby subjecting the holder to civil sanctions including daily fines of up to $25,000.[80]

Biomonitoring, as a toxicity–based permit limitation, has been subject to attack throughout the country on several grounds. Those grounds include variability and nonreproducibility of test results, and lack of development of toxicity reduction evaluations[81] to determine treatment options.[82]

In defense of the first basis of attack (variability and nonreproducibility), the EPA points to the conclusions of a toxicity test method variability study[83] funded by the Chemical Manufacturers' Association.[84] The study examined 141 effluents, finding that 81.6% had coefficients of variation of less than 40% and that 74.5% had coefficients of variation[85] of less than 30%.[86] Of course, these results also demonstrate that fully one-fourth of effluents examined, 25.5% had coefficients of variation of

74. 40 C.F.R. pt. 136, App. A, Meth. 604.

75. *Supra* note 56.

76. 49 Fed. Reg. 9016 (1984).

77. Testimony of Mr. Rick Brandes, Chief of Program Development, EPA Office of Water Enforcement and Permits, Public Hearing re: NPDES Permit for Ina Road Wastewater Treatment Facility, Pima County, Arizona (July 28, 1988); *see also* Environmental Protection Agency, Region IX, Response to Comments; Pima County Ina Road Wastewater Treatment Plant, NPDES Permit No. AZ0020001, at 4 (Sept. 29, 1988).

78. *Id.*

79. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, (EPA 600/4–85/013, March, 1985).

80. Draft Authorization to Discharge Under the National Pollutant Discharge Elimination System, Pima County Wastewater Management Department, Ina Road Wastewater Treatment Plant, Permit No. AZ0020001, at 3, 5–6 (Mar. 11, 1988).

81. Toxicity reduction evaluations are procedures for determining what is causing effluent toxicity.

82. Testimony of Mr. Rick Brandes, Chief of Program Development, EPA Office of Water Enforcement and Permits, Public Hearing re: NPDES Permit for Ina Road Wastewater Treatment Facility, Pima County, Arizona (July 28, 1988).

83. A study objectively to evaluate the intra- and inter-laboratory precision of effluent toxicity test methods.

84. *American Society for Testing Materials, Aquatic Toxicology and Hazard Assessment,* tenth symposium (1987).

85. The average actual variation of test result from a known result, expressed as a percentage, and determined arithmetically by:

coefficient of variation = standard deviation/average

86. *Id.*

more than 30%.[87] Nevertheless, the EPA compares these results to other such tests of analytical chemistry methods, and concludes that the toxicity tests exhibit variabilities similar to other accepted chemical measurement methodologies.[88] However, using these figures one wonders how variations greater than thirty percent in more than one quarter of samples could harmonize with the *reliable and reproducible* standard of *Chevron Oil*.

A second general complaint against biomonitoring as a permit limitation is the lack of development of definitive procedures for conducting toxicity reduction evaluations. Where biomonitoring is included an NPDES permit limitation, species mortality in excess of the permitted percentage triggers the requirement to conduct a toxicity reduction evaluation. This evaluation would theoretically result in an authoritative determination of the source(s) of the toxicity, and thereby enable the permit holder to meet the permit limitations. Yet, without demonstrated, reliable procedures for conducting toxicity reduction evaluations that would specifically identify the source(s) of toxicity, the permit holder could easily spend thousands and never find the needle in the haystack.[89]

For example, after biomonitoring showed nonspecific effluent toxicity at a Las Vegas, Nevada POTW, EPA researchers spent more than a year in 1986 and 1987 conducting a toxicity reduction evaluation.[90] No established evaluation procedures existed, so the EPA had to develop procedures as the evaluation was conducted.[91] In March 1987, the researcher conducting the evaluation reported: "We cannot complete the whole story. We have brought to bear our best equipment and brains, but one of the toxic substances eludes us."[92] As of July 1988, EPA had not yet published its report of the results of the Las Vegas POTW toxicity reduction evaluation.[93]

The EPA defends its 1984 policy of including biomonitoring as a permit limitation in over 1000 NPDES permits, notwithstanding the absence of established toxicity reduction evaluation procedures, by pointing to methodologies for conducting toxicity reduction evaluations published in September 1988.[94] The newly published meth-

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87. A 30% coefficient of variation in test results roughly equates to missing a 10 point bullseye and hitting the 7 point ring. The result is unreliable inaccuracy in both test method and weapon, making it impossible either to institute effluent toxicity reduction efforts or advance after engaging the enemy from a protected position with confidence in the result.

88. *Id.*

89. For example, after more than a year of investigation by EPA researchers, a final report identifying the causes of biomonitoring identified toxicity at the Las Vegas, Nevada Publicly Owned Treatment Works had not been issued. (Testimony of Mr. John Gundlack, Pima County Industrial Wastewater Control and Enforcement Supervisor, Public Hearing re: NPDES Permit for Ina Road Wastewater Treatment Facility, Pima County, Arizona (July 28, 1988).

90. Testimony of Mr. John Gundlack, Pima County Industrial Wastewater Control and Enforcement Supervisor, Public Hearing re: NPDES Permit for Ina Road Wastewater Treatment Facility, Pima County, Arizona (July 28, 1988).

91. EPA Memorandum from Dr. Donald Mount, Senior Research Scientist for the EPA's Environmental Research Laboratory in Duluth, Minnesota, to Mr. Pat Blodgett. EPA Region IX (Mar. 24, 1987) (Toxicity Indentification Evaluation of Las Vegas POTW Effluent) (available at Pima County Wastewater Management): *cited in* Testimony of Mr. John Gundlack, Pima County Industrial Wastewater Control and Enforcement Supervisor, Public Hearing re: NPDES Permit for Ina Road Wastewater Treatment Facility, Pima County, Arizona (July 28, 1988). The report clearly characterizes the work at the Las Vegas POTW as "a part of a research program to develop methods to identify the cause of toxicity in effluents."

92. *Id.*

93. Testimony of Kenneth Greenberg, Chief of Permits Issuance Section, EPA Region IX, and Harlan Agnew, Deputy Pima County Attorney, Public Hearing re: NPDES Permit for Ina Road Wastewater Treatment Facility, Pima County, Arizona (July 28, 1988).

94. *Methods for Aquatic Toxicity Identification Evaluations, Phase One, Toxicity Characterization Procedures, The Conducting of Toxicity Reduction Evaluation, for Municipal Dischargers*; and *Toxicity Reduction Evaluations for Industrial Dischargers* referred to in testimony of Mr. Rick Brandes, Chief

odologies are evidently presumed valid despite having been based, at least in part, on the research at the Las Vegas POTW that resulted in the inability to identify all sources of toxicity.[95]

Although there are as yet no reported cases involving discharge violations based on biomonitoring, one would expect this test to be subject to the same standards of judicial acceptance as are the common laboratory methods. Considering the potential for external influences on test results (such as the relative health of the fish, temperature and pH fluctuations of the effluent, etc.), the inherent variations in the test method itself, and the inability of existing toxicity reduction evaluation methodologies to identify all sources of toxicity, judicial support for biomonitoring as a violation-based test methodology seems very questionable.

V. CONCLUSION

Protection of the environment is an integral part of the Air Force's mission to defend the country. As such, it demands our commitment, our resources, and our energy. Environmental protection also demands standards that are sensible, quantifiable, and measurable effectively to gauge success or failure. Characterization of success as failure, or failure as success, because of incorrect testing methodology or results does nothing to protect the environment. Rather, such methods may mask noncompliance and penalize compliance.

This article has identified several of the practices used by environmental regulators that complicate the measurement of success and failure. Sometimes, as in the combined wastewater formula, the inaccuracy of the process has become judicially institutionalized, and we are constrained to live with the results. However, other methods of measuring pollution currently exist that are subjective, or are neither reliable nor reproducible, and have not passed the test of judicial scrutiny. In this situation, there is a reasonable opportunity to contest the methodology.

When a notice of violation is received from a regulatory agency, the natural assumption is that the procedures are to blame. The theme of this article, however, is this: Before acquiescing in an asserted violation of wastewater discharge, or other environmental standard, one must scrutinize the methodology by which that conclusion has been reached. Subject the standard to the light of "causation," and the test method to the light of "reliability" and "reproducibility." If it comes up short, we must suggest to the regulator that a better way be found to measure attainment of our common goal—protection of the environment.

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of Program Development, EPA Office of Water Enforcement and Permits, Public Hearing re: NPDES Permit for Ina Road Wastewater Treatment Facility, Pima County, Arizona (July 28, 1988).

95. Testimony of Mr. Rick Brandes, *supra* note 77.

The Regulation of Polychlorinated Biphenyls Under the Toxic Substances Control Act

CAPTAIN MARC W. TROST, USAF

I. INTRODUCTION

Because of their extreme toxicity, and their pervasive and persistent presence in the environment, polychlorinated biphenyls (PEB's) came under comprehensive statutory control with the passage of the Toxic Substances Control Act (TSCA)[1] in 1976. Section 6 (E) of TSCA provided explicit directions to the administrator of the Environmental Protection Agency (EPA) to promulgate regulations prescribing the disposal and labeling of PCB's,[2] as well as prohibiting the manufacturing, processing, distribution in commerce, and use of PCB's in other than a totally enclosed manner,[3] unless specifically authorized[4] or exempted[5] by the EPA Administrator. The current regulatory scheme provides detailed requirements and restrictions on all aspects of PCB's, from "cradle to grave."[6] The legal practitioner must be aware of a broad range of legal issues pertaining to PCB's, because these issues can impact areas such as contracts for disposal, sale or lease of facilities, spills, records, storage, registration, citizen suits, tort actions, preemption and criminal liability.

II. HISTORICAL DEVELOPMENT

A. PCB Uses and Hazards

PCB's are synthetic chemicals that are part of a broad family of chemicals known as chlorinated hydrocarbons.[7] Produced between 1929 and 1977 primarily by the Monsanto Corporation, PCB's were generally used as cooling liquids in electrical equipment such as transformers and capacitors, and as heat transfer and hydraulic fluids, due to their high boiling point, chemical stability and low electrical conduc-

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1. Pub L. No. 94-469, 90 Stat. 2003 (1976) (current version codified at 15 U.S.C. §§ 2601-54 (1986)) took effect on Jan. 1, 1977, except as provided in § 260.3(f).
2. 15 U.S.C. § 2605(e)(1)(A) and (B).
3. *Id.* at § 2605(e)(2)(A).
4. *Id.* at § 2605(e)(2)(B).
5. *Id.* at § 2605(e)(3)(B).
6. Polychlorinated Biphenyl (PCB's) Manufacturing, Processing, Distribution In Commerce, And Use Prohibitions, 40 C.F.R. part 761, §§ 761.1 - 761.193 (1987).
7. TSCA Assistance Office And Exposure Evaluation Division, Office of Toxic Substances, Environmental Protection Agency, The PCB Regulations Under TSCA: Over 100 Questions and Answers To Help You Meet These Requirements, at 9 (Rev. Ed. No.3, 1983). This publication is available to the public, as well as other PCB information pamphlets, from the above office at Rm. EB-44, 401 M. St., SW, Washington, DC 20460 (202-554-1404). Extreme caution must be exercised in using these informational guides, as they are often outdated. *See also* Dow Chemical Co. v. Costle, 484 F. Supp. 101 (D. Del. 1980) for a good layman's explanation of the chemical composition of PCB's.

tivity.[8] They are also inadvertently produced as process impurities and by–products in the production of various organic chemicals.[9]

Scientific research (primarily animal studies) and tragic ecosystem impacts from PCB pollution of the Hudson River and the Great Lakes resulted in the recognition by the early 1970's that PCB's were both persistent in the environment and harmful to human health, even at low exposure levels.[10] Tests on laboratory animals showed that PCB's could cause cancers, tumors, birth defects and reproductive failures, disorders of the eyes, liver, and gastric tract, swollen limbs and cloracne, a disfiguring skin disorder.[11] Impact upon aquatic life is also significant, ranging from unicellular phytoplankton to fish and shellfish, as well as to birds and mammals. Effects include impaired reproductivity and survival rates, as well as abnormal development of bones and reproductive organs, some at exposure concentrations as low as one part per billion.[12] These effects are exacerbated through a process known as bioaccumulation. Because PCB's are stable compounds that do not easily break down when released into the environment, they are ingested by simple living organisms such as phytoplanktons and passed up the food chain in increasing levels.[13] Therefore, even with limited direct exposure, humans and other organisms at or near the top of the food chain can accumulate significant concentrations of PCB's through bioaccumulation.

The EPA has recently estimated that since PCB's were introduced into commerce in 1929, and prior to the concern about their toxicity and persistence in the early 1970's, approximately 1.25 billion pounds of PCB's had been produced in the United States, with about 965 million pounds used as dielectric fluids in transformers and capacitors.[14] Some 100 million pounds have been used as fluids in hydraulic and heat transfer equipment, 45 million pounds used as plasticizers in carbonless paper, and 115 million pounds used in dispersive applications, such as plasticizers in synthetic resins, rubbers, epoxy paints and protective coatings.[15] In 1978, EPA estimated that prior PCB use had already released 150 million pounds of PCB's irretrievably into the environment, with another 290 million pounds already placed in landfills and dumps, thus leaving approximately 750 million pounds still in service.[16] EPA believes that approximately 310 million pounds of PCB's still remain in service in 30 million discrete units of electrical equipment today, with much of this reduction due to mandatory phaseouts of various types of transformers and capacitors. Nonetheless, this represents a total volume of approximately 1.46 billion gallons of PCB materials still in service.[17]

B. The Statutory Response: Section 6(E) of TSCA

In response to this growing body of scientific research and the ecological disasters

8. *Id.* at 9–10.
9. *Id.* at 9.
10. Environmental Defense Fund v. EPA, 598 F.2d 62, 66–67 (D.C. Cir. 1978). *See also* United States v. Outboard Marine Corp., 789 F.2d 497 (7th Cir. 1986), wherein defendant's manufacturing activities discharged an estimated 1.1 million pounds of PCB's into the Waukegan Harbor in Waukegan, Ill.
11. 47 Fed. Reg. § 37,342, 37,344 (1982). *See also* Environmental Defense Fund v. EPA, 636 F.2d 1267, 1270 (D.C. Cir. 1980).
12. United States v. Commonwealth Edison Co., 620 F. Supp. 1404, 1406 (N.D. Ill. 1985).
13. *Id.*
14. 53 Fed. Reg. 37,436, 37,439 (1988).
15. *Id.*
16. *Id.*
17. *Id.*

attributable to PCB's and other hazardous or toxic substances Congress enacted TSCA in 1976. The purpose of this legislation was to develop adequate data on the effect of chemical substances, to regulate those chemical substances that posed an unreasonable risk of injury to health or the environment, and to exercise the same in a manner that would not "impede unduly or create unnecessary economic barriers to technological innovation."[18]

TSCA empowers the EPA to review, before being marketed, each new chemical,[19] and all existing chemicals,[20] to determine if any given chemical "presents or will present an unreasonable risk of injury to health or the environment."[21] If the EPA has a reasonable basis to conclude such a risk exists, the EPA is directed to regulate the chemical "to the extent necessary to protect adequately against such risk using the least burdensome requirements."[22] To more fully assess the risks associated with any chemical substance or mixture; the EPA can direct further testing on such chemical or mixture by the manufacturer or processor.[23]

Section 6 (E) of TSCA specifically singled out PCB's for mandated regulation by the EPA, in effect representing a congressional determination that PCB's did present an unreasonable risk to human health and the environment.[24] It required the EPA by July 1, 1977 to promulgate regulations prescribing methods for PCB disposal, and required they be marked with adequate warnings and instructions in respect to their processing, distribution, use, and disposal.[25] The phased withdrawal of PCB's was also mandated, with all manufacture, processing, distribution or use of PCB's other than in a totally enclosed manner banned as of January 1, 1978.[26] All manufacture of PCB's was precluded after January 1, 1979, and processing and distribution banned after July 1, 1979.[27] However, EPA may authorize the use of PCB's in a nontotally enclosed manner upon finding that such use will not present an unreasonable risk to health or the environment,[28] or grant a one-year exemption from the manufacturing, processing, and distribution upon a similar "no unreasonable risk" finding and a further determination that good faith efforts have been made to develop a substitute that does not present an unreasonable risk.[29] The EPA may subject the exemption to terms and conditions.[30] The final ban does not apply to distribution in commerce of PCB's sold for purposes other than resale before April 11, 1978.[31] EPA remains free to take action respecting PCB's under any other provision of TSCA or any other federal law.[32]

18. 15 U.S.C. § 2601(b).
19. *Id.* at § 2604.
20. *Id.* at § 2603.
21. *Id.* at § 2605.
22. *Id.*
23. *Id.* at § 2606.
24. *Id.* at § 2605(e).
25. *Id.* at § 2605(e)(1).
26. *Id.* at § 2605(e)(2)(A).
27. *Id.* at § 2605(e)(3)(A).
28. 15 U.S.C. § 2605(e)(2)(B).
29. *Id.* at § 2605(e)(3)(B).
30. *Id.*
31. *Id.* at § 2605(e)(3)(C).
32. *Id.* at § 2605(e)(4). *See also id.* at § 2608(b) which gives the EPA Administrator the discretion to regulate any chemical substance under the Toxic Substances Control Act (TSCA) or any other applicable federal laws, based upon the Administrator's decision that would best serve the public interest. Although the preference is to use other federal laws, the Administrator has decided to regulate PCB's primarily under TSCA.

C. EPA Regulation of PCB

An extensive treatment of the current EPA regulation of PCB's is beyond the scope of this article; however, a complete overview is warranted to give context to later discussion of case law dealing with these regulations.[33]

The EPA regulations governing PCB's are codified at part 761 of title 40 of the Code of Federal Regulations. Because the failure to comply with these regulations is a prohibited act,[34] civil and criminal penalties can be imposed against any person for their violation.[35] The federal district courts are authorized to enjoin prohibited activities or compel the taking of actions required by the regulations.[36] The term "person" is defined to include "any department, agency, or instrumentality of the United States."[37]

The EPA regulations in part 761 apply to all persons who manufacture, process, distribute in commerce, use, or dispose of PCB's or PCB items, and include, but are not limited to: dielectric fluids, contaminated solvents, oils, waste oils, heat transfer fluids, hydraulic fluids, paints, sludges, slurries, dredge spoils, soils, materials contaminated as a result of spills, impurities and by–products.[38] Most provisions apply only to PCB concentrations above specific levels (for example, fifty parts per million (ppm) for storage and disposal in subpart D) and no provision can be avoided as a result of dilution unless this is specifically provided.[39]

Section 761.20 of the regulations contains the specific prohibitions respecting PCB's and PCB items, whereas section 761.30 details the specifically authorized, nontotally enclosed PCB activities. EPA determined that the manufacture, processing, and distribution in commerce of PCB's and PCB items at concentrations at or above fifty ppm constitutes an unreasonable risk of injury to health, and that, in fact, any exposure of humans or the environment to PCB's may be significant.[40] Thus, a totally enclosed manner is one resulting in no exposure of humans or the environment to PCB's.[41] No person may use any PCB's or PCB items, regardless of concentration, in other than a totally enclosed manner, unless authorized by the EPA or unless it fits one of the four listed categorical exceptions.[42] Manufacture of PCB's is prohibited without a specific EPA exemption, subject to two categorical exceptions,[43] and the same holds true as to the distribution in commerce of PCB's or PCB items subject to eight categorical exceptions.[44] The use of waste oil that contains any detectable level of PCB's as a sealant, coating, or dust control agent is prohibited.[45]

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33. Policy and Assessment Branch, Environmental Division, Directorate of Engineering and Services (HQ USAF/LEEVP) plans to distribute in the summer 1989 a PCB Program Management Guide. This guide will give detailed treatment to the substantive and procedural requirements of the PCB regulations, as well as particularized Air Force policy and guidance.
34. 15 U.S.C. § 2614.
35. *Id.* at § 2615.
36. *Id.* § 2616.
37. 40 C.F.R. § 761.3. *But see* 15 U.S.C. § 2621, which provides for national defense waivers in very circumscribed circumstances under specific procedural requirements.
38. 40 C.F.R. § 761.1(b); *see* 40 C.F.R. part 761.
39. *Id.*
40. *Id.* at § 761.20.
41. *Id.*
42. *Id.*at § 761.20(a), as amended by 53 Fed. Reg. 24,206, 24,220 (1988).
43. *Id.* at § 761.20(b).
44. *Id.* at § 761.20(c).
45. *Id.* at § 761.20(d).

Nontotally enclosed PCB activities authorized under 40 C.F.R. § 761.30 are subject to numerous listed use, service, duration, documentation, and notice requirements. Authorized uses of note include transformers;[46] heat transfer systems;[47] electromagnets; switches and voltage regulators;[48] capacitors;[49] and circuit breakers; reclosers and cables.[50] Transformers are of particular legal interest due to numerous requirements surrounding every aspect of their use. Generally, transformers may be used for the remainder of their useful lives; however, the use or storage for reuse of PCB transformers "that pose an exposure risk to food or feed" was banned as of October 1, 1985.[51] Since then, transformers cannot be installed in or near commercial buildings (defined in 40 C.F.R. § 761.3 (1987) to be buildings "typically accessible to both members of the general public and employees") other than in emergency situations, or for purposes of qualifying for reclassification.[52]

Certain specified transformers currently in use in or near commercial buildings must be removed by specified dates or be equipped with electrical protection to avoid transformer ruptures.[53] The major concern here is PCB fires, but more specifically, by–products emitted by the burning of PCB dielectric fluids in transformers. Two such by–products, polychlorinated dibenzodioxin and polychlorinated dibenzofurans, are more toxic than PCB's, having been shown in animal studies to cause cancer of the liver, mouth, adrenal glands, and lungs, and anemia and other blood related problems respectively.[54]

Due to their fire hazards, all PCB transformers, including those stored for reuse, must be registered as specified with fire response personnel having primary jurisdiction[55] and the building owner[56] as of October 1, 1985. Combustible materials cannot be stored within a PCB transformer enclosure, within five meters of such an enclosure, or if unenclosed, within five meters of the transformer.[57] Violations of the requirements in this paragraph have been the frequent basis of EPA enforcement actions.[58]

Visual inspections for leaks are required every three months for each PCB transformer in use or stored for reuse.[59] Any transformers leaking oil must be repaired, the leaking material cleaned up within forty-eight hours of discovery in accordance with 40 C.F.R. § 761.60 (1987), and until the cleanup is complete, specified containment and inspection activities must be conducted.[60] If a PCB transformer is involved in a fire-related incident, as defined, the owner must immediately report the incident to the National Response Center (at 1–800–424–8802, or if in Washington D.C., 426–2675), provide specified information, and take specified measures.[61] Records of the inspection and maintenance actions must be maintained at least three

46. *Id.* at § 761.30(a), as amended by 53 Fed. Reg. 27,322, 37,328–29 (1988).
47. *Id.* at § 761.30(d), as amended by 53 Fed. Reg. 24,206, 24,221 (1988).
48. *Id.* at § 761.30(h).
49. *Id.* at § 761.30(l).
50. *Id.* at § 761.30(m).
51. *Id.* at § 761.30(a)(1). PCB transformers are defined at *id.* § 761.3 to be those containing PCB concentrations of 500 ppm or greater.
52. *Id.* at § 761.30(a)(1)(iii), as amended by Fed. Reg. 27,322, 27,328 (1988).
53. *Id.* at § 761.30(a)(1)(iv) and (v), as amended by 53 Fed. Reg. 27,322, 27,328–29 (1988).
54. Ahrens v. Superior Court, 197 Cal. App. 3d 1139, 243 Cal. Rptr. 421, 422 (Cal. App. 1 Dist. 1988). *See also* 50 Fed. Reg. 29,199 (1985).
55. 40 C.F.R. § 761.30(a)(1)(vi).
56. *Id.* at § 761.30(a)(1)(vii).
57. *Id.* at § 761.30(a)(1)(viii).
58. Current Developments Section, Env't Rep. (BNA) No. 30, at 1508 (Nov. 25, 1988).
59. 40 C.F.R. § 761.30(a)(1)(ix). *But see* 40 C.F.R. § 761.30(a)(1)(xiii) for situations requiring inspections only once every 12 months.
60. *Id.* at § 761.30(a)(1)(x).
61. *Id.* at § 761.30(a)(1)(xi).

years after disposing of the transformer and must be made available for inspection upon EPA request.[62] The regulations also describe in detail, specific servicing and maintenance requirements.[63]

Marking of PCB's and PCB items is covered in subpart C of the PCB regulations. Designated markings must be placed on specific objects, including but not limited to PCB containers, PCB transformers, PCB large capacitors, equipment containing specified PCB electrical devices, electric motors using PCB coolant, hydraulic systems using PCB hydraulic fluid, heat transfer systems using PCB's, PCB article containers, each storage area used to store PCB's and PCB items for disposal, and transport vehicles with PCB containers containing more than 45 Kg (99.4 lbs) of liquid PCB's or any PCB transformer.[64] Any means of access to a PCB transformer, such as doors, fences, and hallways, but excluding grates and manhole covers, must also be marked.[65] All marks must be placed so as to be easily read by persons servicing or inspecting the marked storage areas,, transport vehicles, or item.[66]

Subpart D of the PCB regulations covers storage and disposal of PCB's. Generally, PCB's at concentrations of fifty ppm or greater must be disposed of in an incinerator that complies with 40 C.F.R. § 761.70. Certain designated items may also be disposed of in chemical waste landfills that comply with 40 C.F.R. § 761.75 or in a high efficiency boiler.[67] Other specified PCB articles, such as PCB transformers, capacitors, hydraulic machines,[68] as well as PCB containers,[69] must be disposed of in compliance with listed requirements. Even spills and other uncontrolled discharges of PCB's at concentrations of fifty ppm or greater are considered as disposal of PCB's, and must be handled as prescribed in the regulation.[70] Litigation is a very real possibility in this area if disposal requirements are ignored or violated. Careful contractual drafting, mandating specific regulatory compliance and operational inspection of a contractor's performance under a PCB disposal contract, is a legal necessity.[71]

40 C.F.R. § 761.65 enumerates required procedures for the storage for disposal of PCB's and PCB items at concentrations of fifty ppm or greater. Litigation has occurred respecting the requirement that any PCB articles (such as transformers, capacitors, electric motors, pumps, pipes or a PCB container that contained PCB's or PCB articles and whose surface(s) had direct contact with PCB's) must be removed from storage and properly disposed within one year from the initial date of storage.[72] Facilities used for the storage of PCB's and PCB items designated for disposal must comply with specific construction, location, spill prevention, and composition requirements.[73] Certain specified PCB articles, equipment and containers can be stored for up to thirty days in areas not complying with these requirements if mandated documents are kept.[74] Storage areas must be marked as required in 40 C.F.R. § 761.40 (a)(10).[75]

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62. *Id.* at § 761.30(a)(1)(xii).
63. *Id.* at § 761.30(a)(2).
64. *Id.* at § 761.40(a) - (g).
65. *Id.* at § 761.40(i), as amended by 53 Fed. Reg. 27,322, 27,329 (1988).
66. *Id.* at § 761.40(h).
67. *Id.* at § 761.60(a).
68. 40 C.F.R. § 761.60(b).
69. *Id.* at § 761.60(c).
70. *Id.* at § 761.60(d).
71. *See infra* notes 148–59 and accompanying text, concerning cleanup response costs and generator liability.
72. 40 C.F.R. at § 761.65(a). *See also infra* notes 163–64 and accompanying text.
73. *Id.* at § 761.65(b).
74. *Id.* at § 761.65(c).
75. *Id.* at § 761.65(c)(3).

Any item used to handle and move PCB's and PCB items that directly contacts PCB's must not be removed from the storage facility unless decontaminated in compliance with 40 C.F.R. § 761.79.[76] There must be checks for leaks from all PCB articles and containers in the storage room every thirty days, and any leaks and spills cleaned up and disposed of appropriately.[77] Only specified containers may be used to store liquid PCB's, and certain operations and procedures must be followed, including the requirements of a Spill Prevention and Countermeasure Plan regarding designated large containers.[78] PCB articles and containers must be dated when placed into storage and managed so as to be locatable in relation to the date placed in storage; there are special requirements for large liquid PCB containers.[79] Owners and operators of storage facilities are to establish and maintain records as provided for in 40 C.F.R. § 761.80.[80]

Currently there are no provisions regarding transportation standards and manifest documentation for the shipment of PCB's and PCB items. EPA has proposed regulations covering transportation standards and manifest procedures, and it is projected the final rules will be promulgated in the July 1989 timeframe.[81] These rules will share many similarities with current provisions in the Solid Waste Disposal Act.[82] The proposed notification and manifesting rule will add to and amend current provisions in 40 C.F.R. §§ 761.3, 761.65, and 761.80, as well as adding a new subpart K covering PCB waste disposal records and reports.[83] It will require that certain entities that generate, transport, store, and dispose regulated PCB waste notify EPA of their waste activities and obtain from EPA an identification number to identify it in shipping documents, records and reports.[84] Additionally, it will establish a "cradle to grave" manifest system to track PCB wastes from point of generation to point of disposal, and will mandate record keeping and reporting requirements to complete the tracking system.[85] It also will require all commercial storers of PCB waste (intermediate facilities that store waste generated by others) to be approved by EPA, to prepare a closure plan for their facilities, and either to demonstrate their financial assurance through specified mechanisms for proper closure of their storage areas, or cease all operations and close their facilities.[86] Current provisions related to marking[87] and containers for storage[88] are applicable, however, and a manifest system of some type is presently required to compile documentation required by 40 C.F.R. § 761.80 (1987).[89]

Operating standards and procedural requirements for incinerators and chemical waste landfills are discribed in 40 C.F.R. §§ 761.70 and 761.75. Contracts for

76. *Id.* at § 761.65(c)(4).
77. *Id.* at § 761.65(c)(5).
78. *Id.* at § 761.65(c)(6)and(7).
79. *Id.* at § 761.65(c)(8).
80. *Id.* at § 761.65(c)(9).
81. 53 Fed. Reg. 37,436 (1988) (to be codified at 40 C.F.R. pt. 761) (proposed Sept. 26, 1988).
82. Pub. L. No. 94–580, 90 Stat. 2795 (1976) (current version codified at 42 U.S.C. §§ 6901–6999i (1986)). The Solid Waste Disposal Act is more commonly known as the 1976 Resource Conservation and Recovery Amendments.
83. 53 Fed. Reg. 37,436, 37,459–471 (1988) (to be codified at 40 C.F.R. pt. 761) (proposed Sept. 26, 1988).
84. *Id.* at 37,436.
85. *Id.*
86. *Id.* 37,436–437.
87. *See supra* notes 61–63 and accompanying text.
88. *See supra* note 75 and accompanying text.
89. *See infra* notes 107–12 and accompanying text.

disposal must specify only EPA permitted or approved facilities will be utilized, in compliance with the disposal requirements of 761.60. Improper or untimely disposal can result ultimately in generator liability.[90] PCB container and movable equipment contamination procedures are dealt with in 40 C.F.R. § 761.79. Exemption for specific manufacturers, processors, and distributors of PCB's and PCB items are listed in 40 C.F.R. § 761.80.

The PCB Spill Cleanup Policy is contained in exhaustive detail in subpart G of 40 C.F.R.[91] It establishes the policy and criteria EPA uses to determine the adequacy of the cleanup of spills resulting in the release of PCB's at concentrations generally at or above fifty ppm.[92] The policy does not affect cleanup requirements and standards under other federal statutes, such as the Clean Water Act (CWA),[93] Clean Air Act (CAA),[94] Resource Conservation and Response Act (RCRA)[95] and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA),[96] thus, if more

The EPA has recently estimated that since PCB's were introduced into commerce in 1929, and prior to the concern about their toxicity and persistence in the early is considered improper disposal, EPA will deem compliance with the procedural and substantive provisions of the cleanup policy to be adequate cleanup of PCB's, which creates a presumption under TSCA against further cleanup and enforcement action for penalties respecting the cleanup.[98] However, this does not preclude EPA civil or criminal enforcement action under other provisions of TSCA or other federal statutes.[99]

Although the United States Air Force currently has a PCB spill cleanup policy in place, (and thus available at the bases) it is important to highlight the main provisions of the EPA policy.[100] Stringent reporting requirements exist, in addition to those under the CWA[101] and CERCLA,[102] that require immediate notification to the National Response Center (phone number 1–800–424–8802) of spills of ten or more pounds of PCB's by weight.[103] Spills of any quantity of PCB's in concentrations above fifty ppm directly contaminating surface waters, sewers, drinking water supplies, grazing lands, or vegetable gardens must be reported immediately, but not later than within twenty-four hours of discovery, to the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch).[104] Any spill exceeding ten pounds of

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90. *See infra* notes 146–59 and accompanying text.
91. 40 C.F.R. § 761.
92. *Id.* § 761.120(a).
93. 33 U.S.C. §§ 1251–1387.
94. 42 U.S.C. §§ 7401–7642.
95. 42 U.S.C. §§ 6901–87.
96. 42 U.S.C. §§ 9601–57.
97. *Id.* at § 761.120(e).
98. *Id.* at § 761.135(a).
99. *Id.* at § 761.135(b).
100. The Polychlorinated Biphenyls Spill Cleanup Policy was distributed as an attachment to a July 24, 1987 letter from HQ USAF/LEE/SGF to ALMAJCOM/DE/SG and should be available from the base environmental or bioenvironmental engineer. Also attached to the letter was a listing of all Environmental Protection Agency (EPA) regional addresses and telephone numbers.
101. Under 40 C.F.R. pt. 117, Determination of Reportable Quantities For Hazardous Substances, the reportable quantities of PCB's under § 117.3 is 10 pounds (4.54 Kg) by weight of PCB's, as listed in table 117.3.
102. Under 40 C.F.R. pt. 302, Designation, Reportable Quantities, And Notifications, promulgated pursuant to both the Clean Water Act (CWA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Contingency Plan requires reporting of the release of designated quantities of hazardous waste. For PCB's, the reportable quantity is 10 pounds (4.54 Kg) by weight of PCB's, in table 302.4.
103. 40 C.F.R. § 761.125(a)(1) as amended by 53 Fed. Reg. 40,882, 40,884 (1988).
104. *Id.* at § 761.125(a)(1)(i)and(ii).

PCB's by weight at concentrations at or above fifty ppm must be similarly reported immediately.[105] If contact with the EPA cannot be made e.g., due to holidays, evenings, the base should document notification efforts, notify EPA immediately the next work day, and inform them of the notification efforts.[106] Some spills of less than ten pounds do not require EPA notification under TSCA; however, the spill must still be cleaned up pursuant to cleanup policy standards.[107]

The cleanup standards exclude from numerical standards certain spills, such as those into grazing lands, vegetable gardens, sewers, surface water, and drinking water supplies, because the regional office will establish these cleanup standards at it discretion.[108] Site specific characteristics may require more[109] or less stringent or alternative cleanup levels.[110] Spill cleanup debris and materials must be properly labeled, stored, and disposed of as stated in 40 C.F.R. § 761.60.[111] Spill boundaries, in the absence of visible traces, must be determined by a statistically based sampling scheme.[112] Cleanup of low concentration spills of less than one pound by weight of PCB's must be accomplished as specified with forty-eight hours of knowledge, and the cleanup documented, decontamination certified, and all records kept for five years.[113]

For high concentration spills, defined to be generally those spills containing 500 ppm or greater of PCB's,[114] or spills involving one pound or more of PCB's by weight, the EPA and National Response Center must be notified immediately, the area must be cordoned off and access restricted, cleanup must be initiated immediately, and all actions documented.[115] Further particularized requirements are detailed for decontaminating spills in outdoor electrical substations, other restricted access areas, and nonrestricted access areas.[116] Documentation of the cleanup and decontamination must be maintained for five years,[117] and sampling requirements are specified.[118]

Required reports and records are contained in subpart J and apply to all PCB's and PCB items both in service or projected for disposal.[119] Each owner or operator of facilities using or storing at one time at least forty-five kg (99.4 pounds) of PCB's in containers or PCB transformers, or fifty or more PCB large capacitors, must develop and maintain records containing specified information regarding their disposition.[120] Documents for multiple facilities may be kept in one facility if the storing facility is identified at each PCB facility.[121] These records are then used to prepare the required annual report to be completed by July 1 for the previous calendar year, and all records must be kept at least five years after the facility ceases using or storing PCB's or PCB items in the designated quantities.[122]

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105. *Id.* at § 761.125(a)(1)(iii).
106. *See* EPA policy clarification no. 5, 53 Fed. Reg. 40,882, 40,883 (1988).
107. 40 C.F.R. § 761.125(a)(1)(iv).
108. *Id.* at § 761.120(a)(2).
109. 40 C.F.R. § 761.120(a)(3)and(b).
110. *Id.* at § 761.120(c).
111. *Id.* at § 761.125(a)(2).
112. *Id.* at § 761.125(a)(3).
113. *Id.* at § 761.125(b).
114. *Id.* at § 761.123.
115. *Id.* at § 761.125(c)(1).
116. *Id.* at § 761.125(c)(2)(3)and(4).
117. *Id.* at § 761.125(c)(5).
118. *Id.* at § 761.130.
119. *Id.* at § 761.180.
120. *Id.* at § 761.180(a).
121. *Id.*
122. *Id.*

Owners or operators of disposal or storage facilities must also prepare and maintain documentation containing specified information for PCB's and PCB items handled in the facility in the previous calendar year.[123] These records must be retained at least five years after the facility is no longer used for the storage of PCB's or PCB items, the documents must be available at the facility for inspection by authorized representatives of EPA, and the EPA must be notified in writing within sixty days of the cessation of storage activities.[124]

III. SURVEY OF CURRENT LEGAL ISSUES

A. Federal and State Preemption

Section 2617 (1) of TSCA sets forth a general provision that, except as otherwise provided in paragraph (2), state and political subdivision laws and regulations impacting chemical substances and mixtures are not preempted. Subparagraph (2)(B) states, however, that if the EPA promulgates any requirement designed to protect health or the environment against a risk of injury from a chemical substance or mixture, then state law is preempted, subject to four exceptions. The state may enact or continue requirements applicable to that chemical if: (1) the EPA rule imposes a requirement promulgated under 15 U.S.C. § 2605 (a) (6), thereby prohibiting or regulating the manner or method of disposal of a chemical substance or mixture; (2) the state requirement is identical to EPA's; (3) the state requirement was adopted under the authority of the Clean Air Act or any other federal law; or (4) the state requirement prohibits the use of such chemical substance or mixture. Exception one is often referred to as the parenthetical exception.

Predictably, section 2617 has prompted much litigation and commentary, particularly in relation to state statutes or county and city ordinances that directly or indirectly are designed to ban the disposal of PCB's within their jurisdiction. In light of the toxicity and persistence of PCB's, many jurisdictions have used the state police power (to protect public health safety and welfare) to ban further disposal of PCB's. These laws, if implemented by sufficient jurisdictions, could ultimately make the safe and authorized disposal of PCB's a challenging prospect.

In *Rollins Environmental v. Parish of St. James*,[125] the only Federal Appellate decision to date construing § 2617 of TSCA, the Fifth Circuit held that this section preempted such state and local PCB disposal bans.[126] In *Rollins*, the Parish of St. James, Louisiana, had initially enacted an ordinance banning PCB disposal, but then rescinded it to avoid potential constitutional challenges, and enacted that same day a "sham" ordinance that purported to regulate only commercial solvent cleaning businesses. However, this ordinance effectively was a PCB disposal ban.[127] The Parish admitted it did not qualify for the three listed exceptions (2 – 4), and the court held the "parenthetical exception" was inapplicable as the PCB disposal regulations were issued pursuant to 15 U.S.C. § 2605(e) (1), not § 2605 (a) (6).[128] Section 2605 (e) (1) is the specific provision that required EPA to promulgate regulations governing PCB waste disposal, and the court reasoned that as the PCB disposal regulations

123. *Id.* at § 761.180(b).
124. *Id.*
125. 775 F.2d 627 (5th Cir. 1985).
126. *Id.* at 635–37.
127. *Id.* at 630–31, 636–37.
128. *Id.* at 633–34. *See also* n.7 at 634.

were not issued under § 2605 (a) (6), the parenthetical exception was inapplicable. The court traced the standard constitutional preemption approach, stating that Congress may, within constitutional limits, preempt absolutely state and local law or rule making in a given area, and even if it has not preempted an area absolutely, state and local laws that conflict with or are obstacles to the execution and accomplishment of the full purposes of Congress are preempted.[129] Additionally, preemption may be inferred from the comprehensive nature itself of a congressional scheme respecting an area of activity.[130] Here the court held that preemption was explicitly mandated by Congress, subject only to the four previously listed exceptions, and that the commercial solvent cleaning ordinance had the illegitimate objective of regulating a preempted field, or alternatively that it was an "unreasonably burdensome and restrictive means of obtaining that end, and would thus be in violation of the Commerce Clause."[131]

A district court struck down a similar county ordinance in North Carolina, based primarily on an analysis that while more stringent disposal requirements are permitted by a state or local government, an outright ban on PCB disposals would totally frustrate the congressional scheme for the safe disposal of PCB's, and thus stand as a clear obstacle to the accomplishment of the full congressional objectives under TSCA.[132] Several other district courts have upheld local bans, however, either by finding the ban was enacted pursuant to another federal statute, such as under the CWA to prevent toxic water pollution,[133] or holding that the parenthetical exception did apply and thus the EPA PCB disposal regulations were generic disposal requirements under § 2605 (a) (6), which did not preempt state or local PCB disposal requirements.[134] Several state courts have struck down local hazardous waste disposal ordinances on the ground that they were preempted by comprehensive state laws governing hazardous waste, and in particular, PCB management and disposal.[135]

It is somewhat difficult to harmonize these conflicting holdings and rationales; however, even the courts that have not found state or local PCB disposal requirements to be preempted have recognized an outer limit to these restrictions, specifically, that a state or locality likely cannot absolutely ban the disposal or PCB's. One commentator has suggested that:

> [T]he legislative history of TSCA demonstrates that Congress intended the federal PCB disposal rule to set minimum standards for safe disposal, thereby preempting by implication less stringent state and local requirements. Congress, however, preserved the power of state and local govern-

129. *Id.* at 634.
130. *Id.*
131. *Id.* at 635.
132. Warren County v. State of North Carolina, 528 F. Supp. 276 (E.D.N.C. 1981). *See also* Twitty v. State of North Carolina, 527 F. Supp. 778, 781 (E.D.N.C. 1981).
133. Sed, Inc. v. City of Dayton, 519 F. Supp. 979, 991 (S.D. Ohio 1981).
Note that the ban was only on the storage of PCB's, however, the court's analysis would likely not have changed respecting a disposal loan.
134. Chappell v. SCA Services, Inc., 540 F. Supp. 1087, 1097–99 (C.D. Ill. 1982). The court relied heavily on EPA's then current opinion that state and local laws regulating, but not necessarily banning, PCB disposal were not preempted. This issue came up in the context of whether TSCA preempted state tort actions, which the court held it did not. *See also* Potomac Elec. Power Co. v. Sachs, 639 F. Supp. 856, 860–64 (D. Md. 1986). Set in the context of a criminal action under a state statute governing hazardous waste (including disposal of PCB's) the accused argued the state laws he potentially had violated were preempted. The court, while holding state disposal requirements were not preempted, seemed to concur that an outright ban would be preempted (*id.* at 862–64).
135. Envirosafe Serv. of Idaho v. City Of Owyhee, 735 P. 2d 998, 1003–04, 112 Idaho 687(1987), Rollins Environmental Services, Inc. v. Township of Logan, 508 A. 2d 271, 273, 209 N.J.Super. 556(1986).

ments to tailor more stringent requirements that are consistent with the goal of safe disposal. Nevertheless, total bans—and those requirements that impose practically unattainable conditions, resulting in constructive bans — obstruct the national goal of safely disposing of PCB's; consequently, they ordinarily are preempted by implication. Such bans, constructive or actual, may be saved from preemption only when they serve to ensure safe PCB disposal. Realistically, therefore, a ban may be given effect only on a showing that some unique local geological or physical condition justifies a ban on safety grounds.[136]

This approach seems consistent with the language of 15 U.S.C. § 2617, which appears to allow EPA to exempt a state or local requirement that would otherwise be preempted by TSCA, provided that compliance with the requirement would not otherwise violate an applicable TSCA requirement, and the requirement is designed to protect against the risk of injury to health or environment, is more protective that the corresponding TSCA requirement, and would not unduly burden interstate commerce.[137] Therefore, it can be argued a state or local governmental entity could apply for EPA approval of a local PCB disposal ban if particularized conditions made the ban necessary from a public health standpoint and if the preclusion applied to all PCB disposal, not just to that generated from outside the jurisdiction.

B. Sovereign Immunity and Citizen Suits

Sovereign immunity is the legal doctrine that a sovereign or party with sovereign attributes cannot be sued unless it has consented to such suit.[138] Generally, under the Federal Tort Claims Act (FTCA),[139] the United States has consented to suit for personal injury, death, or property damage caused by the negligence, or acts or omissions of its employees acting within the scope of their duties.[140] The fact that the United States has generally waived its sovereign immunity is a different issue, however, from whether the United States, its agencies, and instrumentalities are subject to TSCA, and if so to what extent.

TSCA, in its general definition section, does not define the term "person";[141] however, "person" is defined in the PCB regulation general definition section to include "any department, agency or instrumentality of the Federal Government."[142] It is required, then, that the Federal Government comply with all requirements and prohibitions in both TSCA and the PCB regulation.[143]

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136. Andreen, *Defusing the "Not In My Backyard" Syndrome: An Approach To Federal Preemption of State and Local Impediments To The Siting of PCB Disposal Facilities*, 63 N.C.L. REV. 811, 815(1985). *See also* Miller, Note, *Environmental Law - Federal Preemption of Local PCB Ordinance Under The Toxic Substances Control Act - Rollins Env. Services (FS), Inc. v. Parish of St. James*, 35 U.KAN. L. REV. 461 (1987).

137. 15 U.S.C. § 2617(b).

138. BLACK'S LAW DICTIONARY, 1252 (5th ed. 1979).

139. 28 U.S.C. §§ 2671–80.

140. 28 U.S.C. §§ 1346(b) and 2674.

141. 15 U.S.C. § 2602.

142. 40 C.F.R. § 761.3.

143. An extensive treatment of the issues of the extent to which the United States must comply with requirements and prohibitions in TSCA and 40 C.F.R., pt.761; the extent to which it and its employees are subject to civil and criminal penalties under TSCA, as well as administrative compliance orders and sanctions; and who may enforce these provisions (specifically, the EPA through the U.S. Justice Department, the state, private individuals) is beyond the scope of this article. Because other articles in this issue of *The Air Force Law Review* treat these issues in depth as to most federal statutes and comparable state statutes, this article will be limited to tort liability and citizens' civil actions under 15 U.S.C. § 2619. Note that Executive Order No. 12,088 (Oct. 13, 1978) (43 Fed. Reg. 47,707 (1978)) requires all federal agencies to ensure compliance of facilities under their jurisdiction with all federal, state, and local pollution control requirements, and fully cooperate therewith to prevent, control, and abate

The recent federal district court case of *Dickerson, Inc. v. Holloway*[144] decided that the United States can be held liable in a state tort action for negligence.[145] In that case, owners of PCB contaminated fuel storage tanks brought an action against the United States for the allegedly negligent selection and supervision by the Defense Property Disposal Service (DPDS), now Defense Reutilization and Marketing Service (DRMS), of the independent contractor DPDS hired to dispose of PCB's from military bases. The court ruled that the United States could be held liable under the FTCA for the acts of its independent contractor that violated PCB disposal requirements under a theory of negligent supervision.[146] The court held that under the facts of this case the selection of the contractor was a discretionary function for which the United States had not waived sovereign immunity; however, under Florida law any employer who hires an independent contractor to conduct an inherently dangerous activity (such as PCB disposal) had a nondelegable duty to ensure the activity was carried out in a nonnegligent fashion.[147]

The court also stated that the Government had "a statutory duty to ensure proper disposal according to a fixed and ascertainable standard," and that the duty had to be carried out at an operational level.[148] While one cannot quarrel with the district court in its conclusion that the United States had a duty to ensure proper PCB waste disposal, the court's reliance on 15 U.S.C. § 2619 to impose directly liability on the Government for violations of these requirements is misplaced. Section 2619 expressly limits citizen civil actions to restraining violations of TSCA, or requirements and prohibited acts thereunder by any "person" that is defined therein to include the United States. Further, these civil actions may only be initiated after the plaintiff has given sixty days notice of the alleged violation to, among others, the alleged violator.[149] Other courts that have addressed this section have stated that citizen suits are limited to private enforcement to restrain violations of PCB requirements and prohibitions, that the violations are limited to ongoing violations, not wholly past ones, and the civil penalties and other penalties provided for in 15 U.S.C. §§ 2414–2616 are not available to private plaintiffs in suits brought pursuant to section 2619(a)(1).[150]

As a result, TSCA and the PCB regulations issued pursuant to 15 U.S.C. § 2605(e) do not create a private civil right of action to recover damages; however, the statute and regulations thereunder can be used to establish a standard of care to which the United States must adhere or face potential state tort liability.[151] A court

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environmental pollution, to include specifically TSCA. The waiver of sovereign immunity regarding compliance does not, however, answer the question whether the United States has waived its immunity regarding civil and criminal suits for noncompliance.

144. 685 F. Supp.1555 (M.D. Fla. 1987).

145. *Id.* at 1565.

146. *Id.* at 1566.

147. *Id.* at 1565–66.

148. *Id.* at 1566.

149. 15 U.S.C. § 2619(a)(1) and (b)(1)(A).

150. Moreco Energy, Inc. v. Penberthy-Houdaille, 682 F. Supp. 933, 934 (N.D. Ill. 1988); and Brewer v. Ravan, 680 F. Supp. 1176, 1183–84 (M.D. Tenn. 1988). These cases seem to hold that only the EPA, through the U.S. Department of Justice, can seek the imposition of civil penalties, the entire gamut of equitable relief, and criminal sanctions. These issues are beyond the scope of this article.

151. Johnson v. Koppers Co., Inc., 524 F. Supp. 1182, 1189 (N.D. Ohio 1981). *See also* 15 U.S.C. § 2619(c)(3) which provides that the limitations of § 2619 do not prohibit persons from seeking any form of relief or enforcement under other statutes or common law. Under the rationale of Milwaukee v. Illinois, 451 U.S. 304 (1982), federal common law actions, such as nuisance, are preempted by pervasive federal statutory schemes, such as the Federal Water Pollution Control Amendments of 1972 (now Clean Water Act) therein. As TSCA provisions and PCB regulations are just as pervasive, the same rationale should apply.

may then award state common law damages to plaintiffs respecting tortious conduct of persons related to their PCB activities, such as for negligence and nuisance; however, the plaintiffs may not obtain an injunction to enjoin an action authorized by TSCA or regulations promulgated thereunder.[152] Section 2619 of TSCA does authorize the court, in a citizen civil action to restrain violations, to "award costs of suits and reasonable fees for attorneys and expert witnesses if the court determines that such an award is reasonable."[153]

C. Generator Liability

As *Dickerson* illustrates, federal entities that generate PCB waste products are fully regulated under TSCA, and to varying degrees they are regulated under other federal statutes.[154] Ensuring the proper handling and disposal of PCB's by independent contractors, be they transporters, intermediate storage facilities, and/or the disposal site, becomes a paramount concern for the contracting office and the Staff Judge Advocate's office. Not only must specific compliance procedures be drafted into the contract with specific reference to applicable regulatory requirements and prohibitions in 40 C.F.R. part 761(1987), but the contracting office must ensure, by contract monitoring at the operational level, that proper storage and disposal standards are being complied with by Air Force contractors.[155] Certainly the specter of liability for the numerous daily actions of Air Force contractors that may run afoul of the complex regulatory standards makes the drafting of explicit indemnity provisions and the requiring of adequate financial assurances on the part of the contractor a necessity.

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152. Dickerson, Inc. v. Holloway, 685 F. Supp. 1555,1565 (M.D. Fla. 1987), in negligence; Chappell v. SCA Services, Inc., 540 F. Supp. 1087, 1100 (C.D. Ill. 1982), in nuisance; Twitty v. State of North Carolina, 527 F. Supp. 778, 783 (E.D.N.C. 1981), in nuisance; and Ahrens v. Superior Court, 197 Cal. App.3d 1139, 243 Cal. Rptr. 421, 424–28 (1988), in strict liability for ultrahazardous activity.

153. 15 U.S.C. § 2619(c)(2). *See also* Environmental Defense Fund v. EPA, 672 F.2d 42,48,52 (D.C. Cir. 1982).

154. Dickerson, Inc. v. Holloway, 685 F. Supp. 1555 (M.D. Fla. 1987). It should be noted that theoretically PCB could be regulated as a hazardous waste under RCRA, 42 U.S.C. §§ 6901–6991i (1984), more properly known as the Solid Waste Disposal Act. Although certain PCB waste is designated as a hazardous substance under RCRA (42 U.S.C. § 6924(d)(2)(D)), EPA decided not to regulate the disposal of PCB's pursuant to RCRA. *See* 45 Fed. Reg. 33,004, 33,086 (1980). EPA has consistently stated that disposal of PCBs would be regulated under TSCA. *See* 47 Fed. Reg. 2379, 2380 (1982); 49 Fed. Reg. 49,784, 49,789–90 (1984); and 53 Fed. Reg. 37,436, 37,439, (1988). *See also* Brewer v. Ravan, 680 F. Supp. 1176, 1181 (M.D. Tenn. 1988) and United States v. Burns, 512 F. Supp. 916, 918–19 (W.A. Pa. 1981).

The discharge of PCB's into waters of the United States has been regulated by EPA under the CWA pursuant to 33 U.S.C. §§ 1307 and 1317. It is listed by EPA regulations as a hazardous substance and reportable to the National Response Center if discharged into the waters of the United States in amounts of 10 pounds or greater pursuant to 40 C.F.R. § 117.3 and table 117.3 (1987), and toxic pollutant effluent standards and prohibitions respecting the discharge of PCB's into waters of the United States have been established in 40 C.F.R. §§ 129.4 and 129.105. The regulation by EPA of PCB's under the CWA was upheld in Environmental Defense Fund v. EPA, 598 F.2d. 62 (D.C. Cir. 1978). *See also* Sed, Inc. v. City of Dayton, 579 F. Supp. 979 (S.D. Oh. 1981) and United States v. Burns, 512 F. Supp. 916 (W.D. Pa. 1981).

The emission of PCB's as an air pollutant could be regulated under the Clean Air Act, 42 U.S.C. §§ 7401-7642 (1988), but the EPA has not yet done so. PCB's are defined by incorporation as a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 U.S.C. §§ 9601–75, pursuant to 42 U.S.C. § 9601(14)(A)and(D). Under 40 C.F.R. § 302.4, anyone who releases 10 pounds of PCB's by weight in any twenty-four hour period must immediately report the release to the National Response Center. Cleanup of past PCB releases, be they intentional disposals or unintentional releases, is governed by CERCLA and 40 C.F.R. pt. 300 (1987).

155. 685 F. Supp. 1555 at 1565–68 (M.D. Fla. 1987).

15 U.S.C. § 2605(e)(5) provides that the particular PCB requirements do not limit the authority of EPA to take action respecting PCB's under other provisions of TSCA and other federal law. This flexibility extends beyond EPA as well. In addition to state common law actions by private plaintiffs for damages related to releases of PCB from a facility, actions may be brought by private parties, the U.S. Government, and states against the generator of PCB wastes, including federal facilities, for any response costs and health assessments or health effect studies under CERCLA.[156] In the case of the U.S. Government or a state, its response costs—which can consist of removal actions (short-term actions to clean up or remove released PCB's) and remedial actions (long-term actions to permanently remedy the release or threatened release of PCB's into the environment)—need only be not inconsistent with the National Contingency Plan, whereas other persons must establish their response actions were consistent with the National Contingency Plan.[157] Each department, agency, and instrumentality of the United States is subject to and must comply with CERCLA, procedurally and substantively, including its *liability* provisions.[158]

This joint and several liability[159] for cleanup and remedial cost can thus be imposed on: a generator of PCB wastes under CERCLA even though an independent contractor hired to transport and dispose of the PCB wastes was the one who illegally disposed of the waste;[160] a generator who sold PCB waste to an intermediary, who in turn sold the PCB waste oil to a third party who in turn illegally disposed of the same;[161] or a manufacturer of liquid PCB's who sold PCB's to a manufacturer of outboard motors prior to the enactment of CERCLA and the outboard motor company so disposed of PCB's to create a current release or threatened release of PCB's into the environment.[162] Current or former employees and their families can bring an action under CERCLA against their employer for medical testing and screening to assess the effect of a PCB release upon them, although they cannot recover under CERCLA for medical expenses associated with the treatment of a PCB release related injury or disease.[163] Similar recovery of removal costs is provided for in the CWA for discharges of oil or hazardous substances into the waters of the United States,[164] although CERCLA remains applicable to releases or threatened releases into all environmental media—air, land, and water.[165]

The EPA also remains free to seek additional remedies under other provisions of TSCA, whether or not a particular situation sought to be redressed is addressed under 42 U.S.C. § 2605(e). In the case of *United States v. Com. Edison Co.*,[166] one

156. 42 U.S.C. § 9607(a).

157. *Id.* The National Contingency Plan is synonymous with the National Oil and Hazardous Substances Pollution Contingency Plan at 40 C.F.R., pt. 300 (1988). Enacted pursuant to 33 U.S.C. § 1321(c)(2) of the CWA and 42 U.S.C. § 9605 of CERCLA, "The Plan provides for efficient, coordinated, and effective response to discharges of oil and releases of hazardous substances, pollutants, and contaminants in accordance with the authorities of CERCLA and the CWA." 40 C.F.R. § 300.3(b) The EPA has proposed a revised 40 C.F.R. pt. 300 which appears at 53 Fed. Reg. 51,394-520 (Dec. 21. 1988).

158. 42 U.S.C. § 9620(a)(1).

159. *Id.* at § 9607(a).

160. United States v. Ward, 618 F. Supp. 884 (D.C.N.C. 1985).

161. State of New York v. General Elec. Co., 592 F. Supp. 291 (N.D.N.Y. 1984).

162. United States v. Outboard Marine Corp., 789 F.2d. 497 (7th Cir. 1986).

163. Brewer v. Ravan, 680 F. Supp. 1176 (M.D. Tenn. 1988).

164. 33 U.S.C. § 1321(f). *See also* United States v. Burns, 512 F. Supp. 916, 919 (W.D. Pa. 1981).

165. *See* 42 U.S.C. § 9601(8) that defines "environment" to include air, land and water media. *See also* United States v. Outboard Marine Corp., 789 F.2d 497 (7th Cir. 1986).

166. 620 F. Supp. 1404 (N.D. Ill. 1985).

of the defendant's transformers had ruptured on a utility pole, contaminating the surrounding soil with PCB contaminated dielectric fluid. The United States brought action under 15 U.S.C. § 2606 to compel defendant further to clean up the contaminated site in accordance with EPA specified conditions, because the PCB was an imminently hazardous chemical as defined in 15 U.S.C. § 2606(a)(1)(B), and the relief sought was "necessary to protect health or the environment from the unreasonable risk associated" with PCB's under 15 U.S.C. § 2606(b). At that time the EPA had not promulgated its spill cleanup policy.[167] The court upheld the enforcement action, stating that the EPA remained free to bring action against an imminent hazard from PCB's, notwithstanding other statutory provisions or regulations dealing with the same basic subject matter.[168] Therefore, 15 U.S.C. § 2606 remains a potential arrow in EPA's quiver for controlling aspects related to PCB's that are not specifically addressed in TSCA or the PCB regulations. A prospective legal concern is that the proposed rule for notification and manifesting of PCB waste activities will prohibit contracting by a PCB waste generator of transportation, storage and disposal services from an entity that has not registered with and obtained from the EPA and EPA identification number, or the carrying out of any such activities without complying with the specified manifest, record and report requirements.[169]

D. Sale or Lease of Federal Facilities

With the impending closure of numerous military installations by Congress, a short excursion into the effect of PCB's present on a facility or real property on the sale or lease of that property is warranted. In *Emhart Industries, Inc. v. Duracell Intern, Inc.*,[170] the court held that the seller of PCB contaminated facilities was liable to the buyer for response costs in assessing the extent of PCB spills and contamination caused by the seller, and cleaning up the leaking drums and underground tanks containing PCB's, as well as leaching and seepage from earlier PCB spills, both under 42 U.S.C. § 9607(a)(2) and (a)(4)(B) of CERCLA and under specific indemnity provisions of the contract for sale of the facilities.

In *McQueen v. MidPeninsula Regional Open Space Dist.*,[171] an open space district proposed to purchase two parcels of surplus federal property, one being a former Air Force station and the other a ground air transmitter receiver site. A problem developed concerning who would be responsible for disposing of transformers with dielectric fluid containing PCB's, as well as buried fuel tanks and drums containing solvents and hazardous chemicals.[172] The Government, acknowledging its duty under TSCA and CERCLA, agreed that it had the responsibility of investigating the sites and decontaminating all hazardous waste spills and materials.[173] This case is also pertinent in that it addresses the need for base closure environmental impact plans and the potential impact of state laws and regulations controlling PCB's.[174]

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167. 40 C.F.R. § 761, subpart G, PCB Spill Cleanup Policy §§ 761.120–761.135, was promulgated in 52 Fed. Reg. 10,705 (Apr. 2, 1987).

168. United States v. Commonwealth Edison Co., 620 F. Supp. 1404, 1411 (N.D. Ill. 1985).

169. 53 Fed. Reg. 37,436, 37,459–471 (Sept. 26, 1988). EPA anticipates promulgating the final rule in the summer of 1989. *See also supra*, notes 83–86, and accompanying text.

170. 665 F. Supp. 549 (M.D. Tenn. 1987).

171. 249 Cal. Rptr. 439 (Cal. App. 6 Dist. 1988).

172. *Id.* at 441.

173. *Id.* at 442.

174. *Id.* at 444–47. The Air Force environmental impact analysis process is contained in Air Force Reg. (AFR) 19–2, Environmental Impact Analysis Process (EIAP). *See also* 40 C.F.R. pt. 1500, Council on Environmental Quality, which is included as part of AFR 19–2.

Clearly the sale or lease of real property or federal facilities that may be contaminated by PCB's or PCB items requires careful legal attention. The United States, as both the owner of the facility and generator of the PCB waste, has statutorily imposed cleanup responsibility and liability. It must ensure there are appropriate environmental assessment processes and careful drafting of contractual indemnity provisions.

E. PCB Marking, Recordation, Storage and Spills

Two recent cases highlight legal problems that can haunt the Air Force as both a user and storer for disposal of PCB's. *Moreco Energy, Inc. v. Penberthy-Houdaille*,[175] dealt with the generator and storer's responsibility to ensure timely disposal of PCB's. In this case plaintiff contracted with defendant to pick up and remove waste oil from its facility. Unknown to defendant Moreco, the waste oil contained in excess of fifty ppm of PCB's, and thus further storage of the oil beyond the year from the date the oil was first stored for disposal constituted a violation of 40 C.F.R. § 761.65(1987). Among its many holdings, the court stated that 40 C.F.R. § 761.65 imposed "a duty of disposal within a one-year time limit upon any entity which 'stores for disposal' PCB contaminated items."[176] Thus, the Air Force or the Defense Reutilization and Marketing Service, to the extent it stores for disposal any PCB's or PCB items for any length of time, must ensure the transporter, intermediate storage facility, and ultimate disposal facility dispose of the PCB wastes within one year of the date of initial storage for disposal.[177] It is, therefore, crucial that the Air Force pay close attention to time in storage at the base, as well as to specific contractual provisions and indemnity clauses regarding the duty of PCB waste transporters, intermediate storage facilities and disposal facilities to ensure that PCB wastes are disposed of within one year of the initial storage date.

In *Yaffee Iron and Metal Co., Inc. v. EPA*,[178] EPA had assessed a $21,000 civil penalty against Yaffee for violations of PCB regulations governing the disposal, storage, marking, and record keeping of PCB's. Yaffee appealed the penalty to the circuit in which it conducted businesses in accordance with 15 U.S.C. § 2615(a)(3). Yaffee was a scrap and warehousing business, which included the purchasing and salvaging of scrap electric transformers, some of which contained PCB's. Among the numerous violations for which Yaffee was cited there were incineration of waste PCB transformer oil without a permit, not having the incinerator meet the requirements of 40 C.F.R. § 761.40(a), not appropriately labeling the PCB transformer oil

175. 682 F. Supp. 933 (N.D. Ill. 1988).

176. Moreco Energy, Inc. v. Penberthy-Houdaille, 682 F. Supp. 933, 937 (N.D. Ill. 1988).

177. The Moreco court did not specifically rule on EPA's statement of Policy in 744 F.2d 1008 (10th Cir. 1985).

178. 40 Fed. Reg. 52,304 (1983), which stated that under 40 C.F.R. § 761.65, no extensions of the one-year time limit to store and dispose of PCB waste were allowed, and that EPA would allocate liability for failure to meet this limit among the waste generator and disposer. As a matter of policy, however, EPA stated it would allow disposal facilities receiving PCB waste a year after it was first put into storage a further 90 days to dispose of it without incurring enforcement liability. The generator would, however, be subject to civil and criminal enforcement action if it delivered waste to a disposal facility with less than 90 days remaining in the one-year period. The disposer would share liability if it failed to dispose of the waste within 90 days of receipt. On the other hand, EPA policy is that the disposer is responsible for destroying waste before the one-year limit *if the generator delivers waste to the disposal facility with 90 days or more remaining in the deadline* (emphasis added). Not addressed in this policy are delays attributable to the transporter or intermediate storage facility. The *Moreco* court did not rule on these policy distinctions, but rather said the generator, once it had stored for disposal PCB wastes, had a duty to ensure its disposal within one year.

containers as required by 40 C.F.R. § 761.44(a), failing to maintain records on the disposition of PCB's as required by 40 C.F.R. 761.45(a), and storing PCB containers for disposal in facilities that did not meet the structural and spill containment standards of 40 C.F.R. § 761.42(b)(1).[179] *Yaffee* highlights the substantial civil penalties that can be imposed for violating TSCA PCB requirements.[180] In addition to civil penalties, criminal sanctions can also be imposed against any person who knowingly or willfully violates TSCA prohibitions or requirements, consisting of a fine up to $25,000 each day of violation and/or imprisonment up to one year.[181]

F. Air Force Policies and Requirements

There is currently no Air Force regulation or comprehensive manual detailing required substantive and procedural standards and requirements for the management of PCB's. The Policy and Assessments Branch, Environmental Division, Directorate of Engineering and Services (HQ USAF/LEEVP) expects to publish and distribute to the field in summer 1989 a "PCB Program Management Guide," detailing "cradle to grave" procedures, standards, and guidance. Several policy and guidance letters have also been issued by the Directorate of Engineering and Services that detail current procedures. An August 15, 1988 letter with attachments from the Environmental Division, Directorate of Engineering and Services (HQ USAF/LEEV) sent to the Directorate of Engineering for all Major Commands provides processing guidance and disposal procedures for all hazardous waste. A 24 July, 1987 letter with attachment issued jointly by the Directorate of Engineering and Services (LEE) and Directorate of Professional Affairs and Quality Assurance, Office of the Surgeon General (SGP) HQ USAF to all major commands contains a comprehensive Air Force PCB cleanup policy, with procedures and requirements. An April 29, 1986 letter from HQ USAF/LEEV, as modified by an April 5, 1988 letter from that same directorate, the Directorate of Engineering to All Major Commands and Separate Operating Agencies (ALMAJCOM/SOA/DE) details the program to phase out PCB's from all Air Force installations by 1992. In the long run, this policy will alleviate a major regulatory health and environmental safety concern; however, in the short run, it will require extensive focus on storage, recordation, manifesting, and disposal related requirements, from proper procedural and substantive compliance to complex contractual drafting responsibilities.

IV. CONCLUSION

The good news from a purely parochial point of view is that PCB's will soon be banished in large measure from our facilities. The bad news is they are now, and will be in the short run, a major compliance challenge. To illustrate, in *Sed, Inc. v. City of Dayton*,[182] the City of Dayton challenged TSCA federal preemption of the control of

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179. Yaffee Iron and Metal Co., Inc. v. U.S. EPA, 774 F.2d 1008, 1014–16 (10th Cir. 1985). Note that these C.F.R. cites are to the then applicable 1978 version.

180. EPA enforcement policy against federal facilities is contained in the Federal Facilities Compliance Strategy (also known as "The Yellow Book"), published in Nov. 1988 by the EPA Office of Federal Activities. An article dealing specifically with these issues appears elsewhere in this issue of *The Air Force Law Review*.

181. 15 U.S.C. § 2615(b). *See also* United States v. Pacific Hide & Fur Depot, Inc., 768 F.2d 1096 (9th cir. 1985); *cert. denied*, 479 U.S. 961 (1987); United States v. Ward, 676 F.2d, 94 (4th Cir. 1982); *cert. denied* 459 U.S. 835 (1982).

182. 519 F. Supp. 979 (S.D. Ohio 1981).

PCB's, in part, because "the TSCA language of [sic] this portion is extremely complex so that persons of ordinary intelligence, including municipal legislators, may have an exceedingly difficult time complying with its provisions . . . ."[183] The court rejected this contention, denying legal practitioners an exemption from malpractice based on the complexity of the provisions.[184]

A word of caution is dictated here. The PCB regulations are constantly being revised, corrected, and amended, and case law construing specific requirements is sparse, at best. The legal practitioner, when faced with a PCB issue, must delve deeply into regulations and scrutinize carefully the Code of Federal Regulations tables or lists of C.F.R. sections affected. The practitioner may then need to consult the Federal Register to update a specific provision. EPA regional office waste and toxic substances branches, as well as the EPA headquarter's TSCA Assistance Office, can be of immeasurable assistance in charting the murky waters of PCB statutory and regulatory control.[185]

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183. *Id.* at 984.

184. *Id.* at 991.

185. The TSCA Assistance Office [TS–799], Office of Toxic Substance, Environmental Protection Agency, Room EB–44, 401 M Street SW., Washington, D.C. 20460, can be reached at 1–800–424–9065, or in Washington D.C. at 554–1404. A listing of all EPA regional office TSCA branch addresses and telephone numbers is attached to the July 24, 1987, HQ USAF/LEE/SGP letter referenced in *supra* note 100.

State Environmental Laws Redefine "Substantial and Meaningful Involvement"

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As the Environmental Protection Agency (EPA) has struggled to define the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),[1] as amended, for "substantial and meaningful State involvement,"[2] the states themselves have seized the initiative to develop an aggressive state role in environmental protection and enforcement. Frustrated by the restricted enforcement authority of EPA against other federal agencies, the protracted nature of EPA enforcement actions, and the limited degree of state participation in the determination of the level of cleanup or the remedy selection process,[3] state officials have begun to exercise, test, and enhance the effectiveness of their own authority. Reluctant to rely on EPA to assure environmental protection and compliance within state boundaries,[4] legislatures and state officials have taken advantage of this opportunity to establish a powerful, independent force to complement, and perhaps challenge, the enforcement and regulatory primacy of EPA.

A 1988 study by Clean Sites, Inc.[5] revealed that within the previous three years, forty-six states had revised existing hazardous waste laws and regulations or had passed new, tougher, and more comprehensive acts in an attempt legislatively to address the implementation, enforcement, and funding concerns of state hazardous waste programs.[6] The states have adopted many different strategies to reach these

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1. 42 U.S.C. §§ 9601–57.

2. *Id.* at § 9621(f).

3. Testimony of Anthony J. Celebrezze, Attorney General, State of Ohio; Howard Kenison, Attorney General, State of Colorado, *Before the Subcomm. on Transportation, Tourism, and Hazardous Materials of the Committee on Energy and Commerce, House of Representatives*, in support of H.R. 3781, H.R. 3782, H.R. 3783, H.R. 3784, and H.R. 3785, 100th Cong., 2d Sess. (Mar. 3 and 10, 1988).

4. Robert Casey, Governor of Pennsylvania, Aug. 24, 1988 press conference, reported in the TOXIC LAW REPORTER, Sept. 7, 1988, at 6: "We have taken a tough stance against those who try to poison our environment. We aren't going to wait for the federal government."

5. In October, 1988, the Department of Defense (DOD) commissioned Clean Sites, Inc. (CSI), to survey and summarize the hazardous waste laws of the fifty states. From this study, CSI prepared individual capsulizations of state laws and developed a set of comparative tables on highlighted issues. CSI also revised two tables previously compiled by B. Simcoe of the Association of State and Territorial Solid Waste Management Officials.

This article is based on CSI's study and is not intended as a primary investigatory document. The authors have taken the data presented in CSI's original document and have drawn their conclusions based upon that data. *See generally* the original study for further sites and information. A copy of the study may be obtained from CSI at a nominal fee. CSI, 1199 N. Fairfax St., Alexandria, VA 22314 (703) 739–1206.

6. As of the writing of the report, all of the states except Arkansas, Hawaii, South Carolina, and Wyoming has taken such action. Hawaii has since enacted a new Environmental Energy Response Act in its civil Defense Code. Title 10, ch. 28 (1988) Hawaii revised statutes.

goals. A number of states have enhanced state authority to order emergency and remedial actions;[7] some have required a variety of environmental studies.[8] Many states have passed laws containing provisions addressing the recovery of costs related to state involvement in remedial actions,[9] increasing enforcement tools,[10] legislating state involvement in the remedy selection process,[11] and enacting a variety of permit fees, user taxes, and bonds.[12] At least twenty states have added provisions authorizing either state-ordered or state-initiated corrective actions at Resource Conservation and Recovery Act (RCRA)[13] permitted facilities.[14]

A major concern of the states is the fundamental issue of establishing and exercising jurisdictional authority over the Federal Government. The study shows that thirty-seven states now specifically list "United States," "the federal government," or "federal agency" within the definition of "person" included in at least one of each state's hazardous waste laws. This, of course, is meant to avoid an immediate determination of inapplicability against federal facilities, such as befell title III of the Superfund Amendments and Reauthorization Act (SARA).[15]

Although any issue of sovereign immunity or pre-emption by federal law must still be addressed on a statute-by-statute basis, the recent decision in *State of Colorado v. United States Department of the Army*[16] (the Rocky Mountain Arsenal case) upheld the independent, parallel application of a state RCRA law at a federal cleanup despite an on-going federal CERCLA activity at the site. This will no doubt greatly enhance the regulatory and enforcement clout of the states.

Because non-National Priorities List (non-NPL) cleanups must follow state law,[17] some interesting legal battles may be developing. For example, in a state such as

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7. Arkansas, Arizona, Alaska, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

8. Arizona, Arkansas, California, Colorado, Connecticut, Florida, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Texas, Utah, Washington, West Virginia, and Wisconsin.

9. Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

10. For the variety of state enforcement tools within each state, *see* CSI's Table of Enforcement Vehicles.

11. Arizona, California, Colorado, Maine, Montana, North Carolina, Ohio, Oregon, Texas, Vermont, West Virginia, and Wisconsin.

12. *See* CSI's Funding Sources for State Funding Mechanisms, which is adapted from B. Simcoe's State Funding Mechanisms For Cleanup of non-NPL and NPL Hazardous Waste Sites, Washington, D.C., Association of State and Territorial Solid Waste Management Officials, June 1988.

13. Pub.L. No. 94–580, 90 Stat. 2795 (codified at 42 U.S.C. § 6901–87).

14. In anticipation of Environmental Protection Agency (EPA) delegation of Hazardous and Solid Waste Amendments (HSWA) authority, the following states assert corrective action authority: Alabama California, Delaware, Florida, Georgia, Illinois, Iowa, Maryland, Montana, New Jersey, New Mexico, Nevada, North Dakota, Oklahoma, Oregon, South Dakota, Tennessee, Texas, Washington, and Wisconsin.

15. 42 U.S.C. §§ 11,001—050. "Person" means any individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, state, municipality, commission, political subdivision of a state, or interstate body. 42 U.S.C. § 11,049(7).

16. Civil Action No. 86–C–2524, slip op. (D. Colo. Feb. 24, 1989). As of the submittal date of this article, the Department of Justice has petitioned for reconsideration. Regardless of the outcome, the authors believe that this decision is indicative of a growing trend to view state environmental laws as parallel statutes that are independently enforceable whenever a direct conflict cannot be proven.

17. CERCLA sec. 120(a)(4), 42 U.S.C. § 9620(a)(4).

Maine, which has legislatively reserved for itself responsibility for the planning, implementing, and directing of response actions, does this authority supersede the Presidential delegation of SARA responsibilities contained in Executive Order 12,580?[18] In a state such as California, which has granted itself the authority to select the remedy, must a federal agency with the lead at a non-NPL site adhere to the state's selection? Can these conflicting grants of authority be "construed together" as urged by Judge Carrigan,[19] or must they be balanced in individual agreements with the state? The Rocky Mountain Arsenal decision, which only addresses the application of state RCRA authority, will likely be seen as support for the position that, in addition to state RCRA laws, state CERCLA or mini-Superfund, Clean Water Act (CWA), and Clean Air Act (CAA) statutes offer independent sources of authority that are not limited by federal CERCLA or governed by Executive Order 12,580, and to which federal agencies must respond as would any other party.

Through these interrelated state authorities, the states have carved an aggressive role for state regulatory agencies. In their state CERCLA laws, many states provide for a comprehensive study of all sites within the state for the purpose of establishing internal priorities.[20] Further, a number of states have not limited their study authority to the process of setting priorities, but have authorized endangerment studies,[21] independent evaluations of a site or a release,[22] remedial investigations and feasibility studies,[23] as well as blanket authorizations to conduct studies as needed.[24] State RCRA laws provide complementary authority for natural resource damage investigations,[25] RCRA facility investigations,[26] and health studies and risk assessments.[27] Because *Colorado v. United States Department of the Army*[28] holds that state law provides a parallel, enforceable authority, states may now conduct these studies independent of any federal CERCLA studies conducted by the "potentially responsible party/parties" (PRP). Additonally, most state RCRA and CERCLA statutes contain provisions permitting the state to order or conduct removal actions, emergency response actions, and remedial or corrective actions. With some states' laws also providing measures for the recovery of costs associated with administration,[29] investigation,[30] enforcement,[31] oversight and operations and maintenance,[32] and

18. Exec. Order No. 12,580, 52 Fed. Reg. 2923 (1987).
19. CERCLA, *supra* note 14.
20. *E.g.*, Iowa, Louisiana, Missouri, Michigan, and West Virginia. *See* CSI study *supra* note 4, for other examples.
21. Arizona, Arkansas, and Connecticut. *See* CSI study, *supra* note 4, for complete information.
22. *E.g.*, Arizona, Arkansas, Kansas, Montana, New York, Rhode Island, Utah, West Virginia, and Wisconsin.
23. *E.g.*, Michigan and Wisconsin.
24. *E.g.*, Pennsylvania and Texas.
25. *E.g.*, New Jersey.
26. *E.g.*, Arizona, Michigan, New York, Oregon, and Wisconsin.
27. Civil Action No. 86–C–2524, slip op. (D. Colo. Feb. 24, 1989).
28. *E.g.*, Arizona and Florida.
29. The following states have provided measures to recover administrative costs (where "C" indicates CERCLA, "R" indicates RCRA, and no reference indicates the state has but one statute): Arizona (R), Arkansas (R), California (to a maximum of 10% under both RCRA and CERCLA statutes), Florida (C), Iowa (C), Minnesota (C), Nebraska (C), New Hampshire (C), New Jersey (R), Pennsylvania (C), Vermont (C).
30. Arkansas (R), Idaho (R), New Jersey (R), Rhode Island (R), Tennessee (C), and Utah.
31. California (C), Colorado (C), Iowa (C), Maryland (C), Minnesota (C), Nebraska (C), New Mexico (R), Pennsylvania (C), and Texas (C).
32. California (C), New Hampshire (C), Pennsylvania (C), Tennessee (C), and West Virginia (C).

response,[33] it is possible that a state could not only initiate these activities on its own authority, but require that the federal facility reimburse the state's cost.[34]

States have also created independent RCRA and CERCLA-type authorities to establish cleanup standards and to select remedies, but this can be complicated where federal facilities are concerned. The waiver of sovereign immunity in RCRA, section 6001 is only effective when a state has objective and ascertainable "requirements" that can be uniformly applied.[35] The states must, therefore, struggle to achieve a balance between the necessary specificity and uniformity and the desire for maximum flexibility in the selection of cleanup standards or remedies.

The Clean Sites study indicates that states run the gamut from no provision authorizing the promulgation of objective standards, to provisions that adopt or modify the federal regulations, to those that specifically grant a state official the authority to determine the level and extent of cleanup. There is significant variety in approach among the states and between RCRA and CERCLA statutes within a state.

States such as Ohio, California, Connecticut and Georgia have authorized the promulgation of RCRA regulations that are more stringent than federal law. Most state CERCLA statutes require that the promulgated regulations be consistent with the National Contingency Plan (NCP), but Pennsylvania not only permits the enforcement of applicable relevant or appropriate requirements (ARAR's) that are more stringent than federal law, but also permits the waiver of standards at state funded sites.[36] Further, Arizona and Pennsylvania permit the regulatory agency to determine the level and extent of cleanup on a case-by-case basis. For example, nuisance-type statutes that permit a state official to "do whatever is necessary" to control a release, and statutes that grant a state official the discretion to establish cleanup levels on a site-by-site basis, may fail to have the objectivity and consistency necessary for application to federal facilities.

Many states have specifically addressed the issue of state selection of remedy. Colorado has granted itself authority to participate in the selection of remedy and in the performance of response and remedial actions. Montana and North Carolina within their CERCLA statutes, and Arizona and California within their RCRA statutes, give the Governor or other state official the authority to select the remedy. Other states, such as Maine, New York, Texas and West Virginia require the regulatory agency to develop or approve the remedial action plan. California also develops the remedial action plan, but provides for the PRP's to appeal. The states have also begun enhancing and expanding state enforcement authority through order provisions—a process by which remedial action can be ordered against a responsible party with treble damage provisions for failure to comply.[37]

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33. Arkansas (both), Florida (R), Nebraska (C), New Jersey (R), North Carolina (C), Pennsylvania (both), Rhode Island (R), South Carolina (C), Tennessee (C), Texas (R), Utah (C), Virginia, and Wisconsin (C).

34. Tennessee also provides that a respondent who fails to adhere to an order is responsible for 150% of the state's costs. T.C.A. 68–46 101 (Jan. 3, 1996), *see* Tennessee Dep't of Public Health Division of Solid Waste Management Rule, ch. 1200 at §§ 1201–11–.1.01(2)(a) (1981), (BNA) 1316,0601 (1986). Louisiana provides for a 25% penalty in addition to state costs for failing to comply with a state order, L.R.S.A., title 30, ch. 11, pt. VII-C, § 1149.46 E.

35. 42 U.S.C. § 6961. *See also* State of Florida Department of Environmental Regulation v. Silvex Corp., 606 F. Supp. 159 (M.D. Fla. 1985); Kelly v. United States, 618 F. Supp. 1103 (W.D. Mich. 1985). Additionally, CERCLA, section 121(d)(2)(C)(iii)(II) requires the general applicability and formal adoption of state standards, requirements, and criteria.

36. Pennsylvania Hazardous Sites Cleanup Act, Act No. 1988–108, § 504(d) and (f), 35 P.S. § 6020.504 (d) and (f).

37. *See generally* CSI's Table of Enforcement Options for a review of the types of enforcement provisions currently used by states.

Another area of interest is the individual state's ability to exact money from federal agencies for activities involving remediation or investigation of hazardous waste sites, whether under its RCRA, CERCLA-based, or other media authorities. While states are becoming steadily more proficient at writing and enforcing provisions that address user and permit fees, cost recovery actions, and trust funds, the case law in each area is still developing. Therefore, each of these funding mechanisms must be carefully analyzed under the appropriate authority to determine if the individual provision is effective when exercised against a federal facility.

There appears to be an increasing trend among states to adopt a "user fee" philosophy for funding environmental and other governmental activities, as opposed to allocating funds from the general tax coffers. This is understandable, for while sources of federal funding have withered, there has been an increasing emphasis on state execution of federally developed and federally driven programs.

Under RCRA-type statutes, states almost universally have adopted some provisions requiring hazardous waste permits (normally for treatment, storage or disposal facilities but also for generating and operating activities) and allowing fees to be assessed for processing the initial permit and for permit renewal or modification. In order to receive EPA certification, a state must estimate its requirements to manage the funding of the program and identify funding sources.[38] It is here that fee schedules come into play as a mechanism for deferring program costs. Many states have begun to use more precise language to authorize the assessment and use of RCRA and other fees in an apparent attempt to assure full and complete recovery of costs. More recent statutes clarify that permit fees are based on actual or estimated cost of services rendered to the assessed party.[39] Arkansas specifies that the fee covers the processing, monitoring and certification of personnel.

It is also possible that a state would demand, under a RCRA-based corrective action authority, cost recovery as a reasonable service charge or other form of "requirement" under the waiver of sovereign immuity found in RCRA, section 6001. Almost half the states have provisions that give broad cost recovery under their RCRA laws to offset state remedial action costs.[40] Some state statutes and regulations also provide order authority where failure of the activity to comply with the order may give rise to double or treble damages, as well as recovery of enforcement costs.[41] The issue then becomes whether this would be a penalty rather than a service charge or other "requirement."[42] It would appear that where a state asserts a RCRA-based corrective action authority over a federal facility cleanup program, the issue of state costs or other assessments against the federal facility should be analyzed under the RCRA waiver of sovereign immunity. Specifically, does the state assessment meet the test of being a reasonable service charge or other form of requirement applicable to federal agencies? The payment of "reasonable service charges" is required by RCRA, section 6001, but excessive fees, fees paid to a general fund or a fund established for another purpose, or fee that are unrelated to a specific service received by the agency are subject to challenge by the federal facility as an impermissible tax. For example, Maryland's Hazardous Substance Spill

38. 40 C.F.R. § 271.124.
39. *E.g.*, Alaska, Iowa, Mississippi, and North Dakota.
40. *See supra* note 10, Table of Funding Sources, recovery column.
41. States with mini-Superfund-based authority for seeking amounts in excess of costs: California, Illinois, Louisiana, Massachusetts, Montana, South Carolina, Tennessee, Texas, and Vermont. States with RCRA-type statutory authority for seeking amounts in excess of costs: Iowa, Louisiana, and Oregon.
42. United States v. Maine, 70 _____ F. Supp. _____, (D. Me. 1989).

Response Law[43] states that fees will be based on "the threat posed" or "the anticipated cost of release." This type of language sets up fees not based on services rendered to the facility but, in essence, creates a general insurance fund for the benefit of the general populace, and, therefore, may be susceptible to characterization as a form of pollution or discharge "tax."

Additional state revenue generating mechanisms involve setting up trust funds based on fees and taxes on current operations to generate monies for the state that can be used to solve later problems. For example, Louisiana has established a trust supported by generators who "self-insure" against the possibility of future abandoned sites by paying generator fees now.[44] While this is a practical solution to protect the public, these are not within the classic definition of "fees" for which sovereign immunity has been waived. For federal facilities, the legal issues arising from a state's fees and taxes are largely the same as for other environmental statutes.[45]

States also use cost recovery provisions under their mini-superfund programs to defray remedial operational costs. Considerable disagreement still exists as to whether federal CERCLA contains a waiver broad enough to permit recovery of an enforcing agency's costs. However, even if CERCLA does not provide a basis for "cost recovery" under section 107,[46] there is still the argument that CERCLA, section 120(a)(4) operates as a broad waiver of federal supremacy, subjecting non-NPL sites to "State laws concerning removal and remedial action," including any state cost recovery provision.

While states may assert that CERCLA, sections 120(a)(4) and (i) operate as broader waivers than RCRA, section 6001, thereby permitting the state to recover costs under CERCLA that are unacceptable under RCRA, the classic federal response is that waivers of sovereign immunity are strictly construed and must be clearly waived. Neither the words "reimbursements" nor "fees" are specifically mentioned in CERCLA, section 120, nor variations thereof; therefore, it is questionable whether a supplemental waiver beyond RCRA, section 6001 exists.

However, a review of state "Superfund" laws indicates that the existing statutes contain broad cost recovery authorities.[47] As mentioned earlier, states have authorized the recovery of costs for investigations, response actions, and administration, as well as criminal penalties and treble damage provisions for violating or disregarding an order. Some are written to allow recovery of any monies expended from "the fund."[48] As many state funds are designed for abandoned or uncontrolled sites and others specifically state that funds may not be used for federal activities, the logical question is whether these states are authorized to recover costs from a site (e.g. one on a federal facility) that has not benefited from the fund. Can an independent authority to recover costs or an effective waiver of sovereign immunity exist by

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43. Code of Maryland, Health Environment Article, tit. 7—Hazardous material and Hazardous Substance, subtitle 2—Control Hazardous Substances (1987).

44. Louisiana Solid Waste Management and Resource Recovery Act, 1987, Title 30, Ch. 11.

45. *See*, Benton and Baur, *Applicability of Environmental "Fees" and "Taxes" to Federal Facilities*, 31 A.F.L. REV. 253 (1989).

46. *See* Lundy, *Department of Defense Liability for State Oversight Costs Under CERCLA 107*, 31 A.F.L. REV. 145 (1989).

47. States with a basis for a claim of authority include: Arizona, Arkansas, California, Colorado, Connecticut, Florida, Iowa, Louisiana, Maryland, Massachusetts, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, and Wisconsin.

48. *E.g.*, Kansas, Maryland, Michigan, and Wisconsin

analogy? Where is the waiver of sovereign immunity that would subject a federal activity to state assessments? Many would say there is none.[49]

Federal facilities can anticipate that states will attempt not only to incorporate their technical requirements and standards into facility remedial action programs, but also to recover fully their costs of involvement; this represents no more than what they increasingly seek and receive from the private sector. While the "fee versus tax" issues of RCRA and the cost recovery strategies of CERCLA require different analyses, there seems to be a continuing trend throughout both statutes that federal facilities are not to be treated differently from private activities.[50]

Another cost issue involves the assessment of fines and penalties against federal facilities. Provisions to assess fines and penalties generally, as well as the ability to revoke permits for noncompliance, are among the basic requirements for states to receive authorization form EPA to enforce the federal RCRA program.[51] As a result, these provisions are becoming standardized within state hazardous waste laws. EPA has also "highly recommended" provisions to allow a state to recapture any RCRA enforcement costs incurred during litigation or compliance activities.[52]

Cost issues are extremely important to defense activities, particularly in what may be leaner Gramm-Rudman[53] times ahead. Budget issues for federal agencies are almost always a zero-sum proposition; that is, once the year's budget has been authorized and appropriated, a total sum has been specified. Unanticipated costs must be paid by doing without something else; rare are the times when Congress will appropriate additional funds to meet these needs. For that reason federal agencies must anticipate a state's ability to exact money from federal activities and, if such ability exists, a facility must be able to program sufficient funds to meet that requirement.

The issue of federal monetary liability to the states for remedial action activity at federal facilities is statutorily unclear and devoid of case law. It is clear, however, that there is a vital need to secure active state participation in DOD remedial actions. 10 U.S.C. § 2705 creates a mandatory obligation to advise the states on a number of Defense Environmental Restoration Account (DERA) funded activities, and particularly to ensure that states have an "adequate opportunity for timely review and comment" on proposals for response actions before undertaking any response action not necessitated by an emergency. Without timely state involvement and with the specter, nonetheless, of clear state "authority" under state removal and remedial action laws or RCRA corrective action provisions at non-NPL sites,[54] a DOD reme-

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49. *See* Lundy, *supra* note 46. Others would say that CERCLA, section 120(a)(4) is that waiver for non-NPL sites. But can it meet the clarity test with a mere reference to "requirements" and "enforcement" and no discussion of money or costs? Others would cite CERCLA, section 107(a)(4) for " all costs of removal or remedial action incurred by the United States or a State or an Indian tribe not inconsistent with" the yet-to-be-published National Contingency Plan (NCP). Under this interpretation, the issue becomes the meaning of "removal or remedial action" where the Presidential delegee under Executive Order No. 12,580 for doing that action and undertaking the costs involved is DOD, and Superfund is not involved. Further, CERCLA, section 107(g) directs the reader to section 120, "For provisions relating to Federal agencies." Also, does this provision pertain only to non-NPL sites, since at a federal National Priorities List site the state's role appears to be consultative? *See* CERCLA, sections 120(f) and 121, 42 U.S.C. §§ 9620(f) and 9621.

50. Lotz, *Federal Facility Provisions of Federal Environmental Statutes: Waiver of Sovereign Immunity for "Requirements" and Fines and Penalties*, 31 A.F.L. REV. 7 (1989).

51. 40 C.F.R. § 271.16(a).

52. *Id.* at § 271.16(c).

53. Balanced Budget and Emergency Deficit Control Act of 1985, Pub.L. No. 99–177, as amended, 2 U.S.C. §§ 901–22.

54. Colorado v. Department of the Army, Civil Action No. 86–C–2524, slip op. (D. Colo. Feb. 24, 1989).

dial action may have to be re-done in whole or in part to comply with state law. Many find that prospect unacceptable, given federal funding constraints and the scope of DOD's remedial action agenda encompassing over 8,000 sites.

To solve that problem, DOD has proposed and is attempting to negotiate DOD-State Memoranda of Agreement (DSMOA), to acquire state "services" under DOD's authority[55] to fund state participation for this needed consultative and cooperative role. Initial negotiations commenced in the fall of 1988 between representatives of DOD, The National Association of Attorneys General and the Association of State, Territorial Solid Waste Management Officials, with observers from the National Governors' Association. The end product desired is a model Memorandum of Agreement that will contain provisions for state funding, discuss dispute resolution and contain some recognition for DOD to conduct a "worst first" cleanup program on a national basis. A drat DSMOA is moving toward consensus approval among the state-based organizations.

It is becoming increasingly apparent that state governments will attempt to exercise a variety of authorities over DOD remedial action program. The extent and mechanics of those authorities are caught in a patchwork of overlapping, at times redundant, and at times conflicting state and federal statutory and regulatory provisions. The challenge is to avoid this "regulatory gridlock"[56] and keep DOD remedial action program moving forward to protect the people and the environment at or near federal facilities. By statute, EPA and the states must be an integral part of the cleanup process. The challenge for the federal agency practitioner is to understand the interactions and obligations of the patchwork of state and federal law applicable at his facility and to use that understanding to facilitate communications among the parties. Each wants an efficient cleanup effort. Open and honest interaction and coordination with state officials, recognizing their expectations and responsibilities, should improve state-DOD relations across the environmental board. More importantly, it should provide access to the state's repository of expertise in local conditions and contractors. This can be useful, both from the standpoint of united planning as well as quality assurance and quality control. Properly structured, this can result in more effective, more efficient, and less costly remedial activities within the framework of federal legal budgetary and management constraints.

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55. 10 U.S.C. § 2701(d).

56. An apt description of the predicament that the authors attribute to Lt. Col. Ken Cornelius during his assignment to the Air Force's Environmental Division.

Department of Defense Liability for State Oversight Costs Under CERCLA 107

MARNY LUNDY

The question addressed in this article is whether the Department of Defense (DOD) is liable under section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA 107)[1] for state oversight costs that were incurred during the cleanup of a DOD facility. For the DOD to be held liable, Congress must have expressly waived the DOD's sovereign immunity from state regulations and requirements, and clearly and unambiguously provided for state reimbursement.[2] As will be shown, Congress has not expressly provided for state reimbursement of oversight costs, although Congress has provided for the DOD to be bound by certain state laws, rules, and regulations. Therefore, although the DOD must allow for state participation in the cleanup process, it is not liable for the reimbursement of these costs.

I. LIABILITY FOR ENVIRONMENTAL CLEANUP

CERCLA 107 provides for the liability of the following parties when there is a release, or a threatened release of a hazardous substance that causes the incurrance of response costs: (1) owners and operators of a vessel or facility (2) persons who were owners or operators of facilities, at the time of disposal, at which hazardous substances were disposed (3) persons who arranged for disposal, treatment, or transport of hazardous substances owned or possessed by them, or by anyone else, at a facility owned or operated by another party (4) persons who accept or accepted hazardous substances for transport to disposal or treatment facilities selected by them.[3]

These parties are liable for, "all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe not inconsistent with the national contingency plan."[4] DOD causes response costs to be incurred because it is an owner and operator of facilities at which hazardous substances have been disposed. These substances may now cause or threaten to cause the release of hazardous substances requiring response actions. These costs were incurred by the DOD itself as a part of its internal cleanup procedures, as well as by other federal agencies and by the individual states in which the response actions took place. As such, individual states are making demands on DOD in an effort to recapture the costs of their response expenditures.

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1. 42 U.S.C. § 9607.
2. *See* Hancock v. Train, 426 U.S. 167 (1976) (Federal installations discharging air pollutants not required to obtain state pollution permit, despite fact that the Clean Air Act requires federal installations to comply with state air pollution requirements.).
3. 42 U.S.C. § 9607(a).
4. *Id.* at § 9607(a)(4)(A).

A. Waiver of Immunity

State Requirements. CERCLA 107(g), in conjunction with CERCLA section 120(a)(1) (CERCLA 120(a)(1)) expressly applies CERCLA's liability provisions to federal facilities. CERCLA 107 (g) merely states that federal agencies are governed under section 120. CERCLA 120 (a)(1) states,

> Each department, agency, and instrumentality of the United States (including the executive, legislative, and judicial branches of government) shall be subject to, and comply with this chapter in the same manner and to the same extent, both procedurally and substantively, as any nongovernmental entity, including liability under section 9607 [CERCLA 107] of this title.

Therefore, since the DOD is a department of the United States, it is bound by section 120 (a)(1). As such, DOD must comply with CERCLA'a substantive and procedural regulations. The DOD thus appears to be liable for the costs of a state's removal or remedial action under CERCLA 107, as long as these costs are consistent with the National Congingency Plan.

Although section 120, on its face, appears to treat the DOD in the same manner as a nongovernmental agency, it is clear from other statutory provisions of the Superfund Amendments and Reauthorization Act (SARA) such as 10 U.S.C. § 2701, that CERCLA treats DOD in a materially different manner from nongovernmental agencies. Under 10 U.S C. § 2701 (c)(1) the Secretary of Defense is given primary responsibility for conducting "*all* response actions with respect to releases of hazardous substances" from DOD sites, facilities and vessels. While the DOD's program must be carried out in consultation with the Enviromental Protection Agency[5] (EPA), DOD is the lead agency. As such, whenever there is a release of hazardous substances, DOD is the lead agency responsible for identifying, investigating, researching and developing, and cleaning up contamination from hazardous substances and pollutants, as well as correcting other environmental damage that creates an imminent and substantial endangerment to the public health or welfare, or to the environment. However, in actions involving nongovernmental agencies, the EPA, or the pertinent state's version of the EPA, is the lead agency.[6]

Although DOD is granted the role of the lead agency, it must conduct its program, "subject to, and in a manner consistent with section 120."[7] Thus, it must comply with, "all guidelines, rules, regulations, and criteria which are applicable to preliminary assessments carried out . . . for facilities at which hazardous substances are located."[8] Additionally, the DOD must comply with, "state laws concerning removal and remedial action, including state laws regarding enforcement, . . . when such facilities are not included on the National Priorities List."[9] The DOD does not have to comply with the state laws, however, where, "a State law would apply any standard or requirement to such facilities which is more stringent than the standards and requirements applicable to facilities which are not owned or operated by . . . [the federal government]."[10]

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5. 10 U.S.C. § 2701(a)(3).
6. 40 C.F.R. § 300.23(d)(3) (1988).
7. 10 U.S.C. § 2701(a)(2).
8. 42 U.S.C. § 9620(a)(2).
9. *Id.* at § 9620(a)(4).
10. *Id.*

Therefore, although DOD is the lead agency in cleaning up its sites, it must still follow state regulations in conducting its cleanup activities.

State Reimbursement. CERCLA 120 has the effect of treating DOD as a nongovernmental agency in terms of the Department's mandatory compliance with state rules, regulations, and criteria regarding preliminary assessments and the undertaking of removal and remedial actions. What is not clear is whether section 120 (a)(1) requires DOD to pay the costs of removal or remedial actions incurred by the state.

Section 120 (a)(1) states that each department of the United States is subject to CERCLA to the same extent as any nongovernmental entity, "including liability under section 9607 [CERCLA 107] of this title. Nothing in this section shall be construed to affect the liability of any person or entity under sections 9606 [CERCLA 106] and 9607 [CERCLA 107] of this title." However, other subsections within CERCLA 120 deny federal agencies' financial responsibility to federal, state, and local governments.

Section 120 (a)(3) states, "This subsection shall also not apply to any requirements relating to bonding, insurance or financial responsibility." The term "financial responsibility" is not defined in the statute, nor is it discussed in the statute's legislative history. Therefore, absent a clear intent to the contrary, the plain meaning of the term should be used, except where this interpretation would render the statute absurd.[11]

Although section 120(a)(3) appears to directly contradict the mandate in section 120(a)(1) that nothing in CERCLA 120 affects the DOD's liability under CERCLA 107, these sections can be reconciled by interpreting section 120(a)(3) as referring to financial responsibility for the costs incurred by the federal, state, and local governments, rather than referring to the Department's financial responsibilility for costs incurred during the course of its own cleanup actions. Additionally, section 120(a)(1) can be interpreted as imposing liability, other than financial liability, on the Department. This other liability is the responsibility under 10 U.S.C. § 2701 to carry out all response actions necessitated by the release of hazardous substances at DOD sites and facilities, and to bear the costs of its own response actions.

This interpretation of sections 120 (a)(1) and (3) is supported by section 120's legislative history. According to the Conference Report accompanying H.R. 2005,[12] the House amendment to CERCLA that added section 120[13] provides that,

> [E]xcept for financial responsibility requirements, all guidelines, rules, regulations and criteria applicable to preliminary assessments, to evaluations pursuant to the National Contingency Plan, to inclusion on the National Priorities List, and to remedial actions at facilities where hazardous substances are located shall also be applicable to facilities which are owned or operated by the Federal government.[14]

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11. Compagnie Des Bauxites De Guines v. Inc. Co. of North America, 554 F. Supp. 1075 (W.D. Pa. 1983).

12. H.R. CONF. REP. No. 962, 99th Cong., 2d Sess., *reprinted in* 1986 U.S. CODE CONG. & ADMIN. NEWS 3276.

13. CERCLA 120 was not enacted as part of the original CERCLA of 1980, Pub.L. No. 96–510, 94 Stat. 2767, but was added by the Superfund Amendments and Reauthorization Act of 1986, Pub.L. No. 99–499, Title I, § 120, 100 Stat. 1666 (SARA). H.R. 2005, the House Amendment to the original CERCLA, was enacted into law and became SARA.

14. H.R. CONF. REP. No. 962, 99th Cong., 2d Sess. 239, *reprinted in* 1986 U.S. CODE CONG. & ADMIN. NEWS 3332.

The statute sets out the role of the state in federal facility cleanups as follows:

> The Administrator and each department, agency, or instrumentality responsible for compliance with this section shall afford to relevant State and local officials the *opportunity to participate* in the planning and selection of the remedial action, including but not limited to the review of all applicable data as it becomes available and the development of studies, reports, and action plans. In the case of State officials, the opportunity to participate shall be provided in accordance with section 9621 [121] of this title.[15]

Section 6920 (f) was specifically adopted over a proposed House provision, (120(i)), which stated, "A State may request and be granted by the Administrator the role of on-scene coordinator for Federal facility projects with its boundaries. The necessary and reasonable expenses of the on-scene coordinator shall be paid to the State by the Agency."[16]

If the House provision had passed, the Federal Government would clearly be obligated to reimburse the states for these oversight costs. Because the House provision was replaced by what eventually became 120(f), which grants the state the opportunity to participate, but fails to mention the federal facility's obligation to pay for these participation costs, a negative inference can be drawn from the omission.

The legislative history behind CERCLA 120 fails to discuss why the proposal for an on-scene coordinator was replaced in favor of merely granting state and local officials the opportunity to participate in the planning and selection of a remedial action. The legislative history also fails to state why the on-scene coordinator would have been paid by the Federal Government under the formerly proposed scheme, whereas the legislation as passed fails to mention who would pay the expenses of participating state or local officials.

There are many possibilities as to why the proposal for an on-scene coordinator, paid for by the federal agency, was rejected in favor of merely allowing state officials to participate in the process. One possible reason is that Congress felt that a state on-scene coordinator was superfluous, since state interests were already adequately protected under the new statutory scheme.

Under the new statutory scheme, federal agencies must: (1) follow state laws concerning removal and remedial actions for sites not listed on the National Priorities List;[17] (2) follow state environmental standards, requirements, criteria, or limitations which are more stringent than the Federal equivalents, as to any hazardous substances, pollutants or contaminants which will remain on site at the completion of the remedial action;[18] and (3) provide for "substantial and meaningful" state involvement in initiation, development, and selection of remedial actions.[19] This involvement includes:

> (A) State involvement in decisions whether to perform a preliminary assessment and site inspection (B) Allocation of responsibility for hazard ranking system scoring (C) State concurrence in deleting sites from the National Priorities List (D) State participation in the long-term planning process for all remedial sites within the State (E) A reasonable opportunity for states to review and comment on each of the following: (i) The remedial investigation and feasibility study and all data and technical documents leading to its issuance (ii) The planned remedial action identified in the

15. 42 U.S.C. § 9620(f) (emphasis added).
16. H.R. 2005 as passed by the House (H.R. 2817) section 120 (i) (1986). *See* 1988 U.S. CODE CONG. & ADMIN. NEWS 2876.
17. 42 U.S.C. § 9620(a)(4).
18. *Id.* at § 9621(d)(2)(A)(ii).
19. *Id.* at § 9621(f)(1).

remedial investigation and feasibility study (iii) The engineering design following selection of the final remedial action (iv) Other technical data and reports relating to implementation of the remedy (v) Any proposed finding or decision by the President to exercise the authority of subsection (d)(4) of this section [relating to the President's ability, under certain specifically prescribed circumstances, to select a remedial action which, while obtaining a degree of cleanup which assures protection of human health and the environment, fails to attain a level or standard of control at least equivalent to a legally applicable or relevant and appropriate standard].[20]

In addition to requiring federal agencies to follow the foregoing rules and regulations, the new statutory scheme enables states to enforce any federal or state standard, requirement, criterion, or limitation to which remedial actions are required to conform.[21] Furthermore, if the President proposes to select a remedial action that does not obtain a legally applicable standard, requirement, criterion, or limitation, the state must be given an opportunity to concur in the President's selection. If the state does not concur, and it wants the proposed remedial action to conform to the standard, requirement, criterion, or limitation, the state may maintain an action to determine whether the President s finding is supported by substantial evidence. If the state establishes that the President's finding is not supported, then the remedial action must be modified to conform. If the state fails to establish that the President's finding is not substantiated by the evidence, the state may, nonetheless, require that the remedial action conform to such standard, requirement, criterion, or limitation, if the state pays the additional costs attributable to meeting it.[22]

Clearly states, under sections 121 and 120, are given significant powers to protect their interest. it is highly possible that Congress decided against granting states the role of on-scene coordinator, at the federal agency's expense, because the increased costs of such a program could not be justified; states are already able to protect their interests without the onerous financial burden of such a program.

Federal facilities differ materially from nongovernmental facilities in several pertinent ways. For purposes of this discussion, one of the most important differences is that, unlike nonfederal sites, states do not have a large financial stake in the cleanup of federal sites.

As for nonfederal sites,

The President shall not provide any remedial actions pursuant to this section unless the State in which the release occurs firs[t] enters into a contract or cooperative agreement with the President providing assurances deemed adequate by the President that (A) the State will assure all future maintenance of the removal and remedial actions provided for the expected life of such actions as determined by the President; (B) the State will assure the availability of a hazardous waste disposal facility acceptable to the President and in compliance with the requirements of subtitle C of the Solid Waste Disposal Act. [42 USCA section 6921 et seq.] for any necessary off site storage, destruction, treatment, or secure disposition of the hazardous substances; and (C) the State will pay or assure payment of (i) 10 per centum of the costs of the remedial action, including all future maintenance. . . .[23]

Thus, whenever a state is involved in the cleanup of a nonfederal facility, the state incurs significant and on-going financial liabilities.

As for federal facilities, 120 (a)(3) states that, "Nothing in this Act shall be construed to require a State to comply with 104(c)(3)." Therefore, states do not assume the future maintenance of the removal and remedial actions, they do not

20. 42 U.S.C. § 9621(f)(1).
21. *Id.* at § 9621(e)(2).
22. *Id.* at § 9261(f)(3).
23. *Id.* at § 9604(c)(3).

supply hazardous waste disposal facilities, and they do not pay any part of the costs of the remedial action undertaken by the federal agency.

Because states have a large financial stake in the cleanup of nonfederal sites, states have a significant financial interest in ensuring that the cleanup is conducted properly. This interest helps justify the state's supervisory role in the cleanup process. Without this financial interest, however, the state's argument that it should be allowed to supervise the DOD's response actions, and be reimbursed by DOD for their supervisory expenses, is significantly weakened. This, when combined with the fact that the state's actions duplicate the federal agency's actions, strongly argues in favor of disallowing state recovery of oversight costs against federal agencies such as DOD.

This theory is supported by the statements of Congressman Fazio, one of the authors of the amendments to section 121. According to Congressman Fazio,

> I think there is a concern about paying for cleanup, and I think that's another one of the issues that's being debated in the other committee. I don't think we can unnecessarily burden local governments with problems that were not of their creation, and some of them don't have the resources. But we can't be seen as a bottomless pit in a sense, particularly if standards are going to be set at a very, very high level, one that seems to be beyond what normally would be the case in a market basket of States.[24]

In his comments, Congressman Fazio refers to the debate about who should bear the financial burden of response actions. As Fazio stated, it is inherently unfair to force states to pay for any of the response costs because the states did not cause the situation. This is particularly true where the situation was caused by a federal agency. On the other hand, if the goal behind the legislation is to obtain the highest possible environmental standards, then the states must contribute financially towards the cleanup; the Federal Government does not have the funds to conduct an appropriate level of cleanup at all the sites that require action.

In keeping with this intent, Congress expressly precluded state liability for any of the costs of the pertinent federal agency's response action. (''Nothing in this Act shall be construed to require a State to comply with 104(c)(3) [a state must assure all future maintenance of removal/remedial actions and pay for 10% of costs of the remedial action] in the case of a facility which is owned or operated by any department, agency or instrumentality of the United States.'')[25] In order to fully implement this intent, Congress should not allow states to recover their costs from any response actions voluntarily undertaken at a federal facility site (other than actions taken pursuant to a request by that federal facility). Since the federal agency is required to conform to state regulations in its response action, the state is actually duplicating the efforts of the federal agency, and the Federal Government does not have the funds to pay for duplicative efforts. Therefore, if the state choses to oversee the efforts of the federal agency, the state should pay for this out of its own fisc.

If the DOD were financially liable under Section 120(a)(1) for all response costs, whether incurred by DOD or other federal agencies or states, there would be no need for further statutory provisions regarding the DOD's financial liability; further provisions would be superfluous since liability is already provided for.

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24. Defense Environmental Restoration Program to Cleanup Former Hazardous Waste Dump Site: *Hearing Before the Environmental Restoration Panel of the Comm. on Armed Services*, H.R. 99th Cong., 1st Sess. 42 (1985).
25. 42 U.S.C. § 9620(a)(3).

If, on the other hand, 120 (a)(3) exempts DOD from financial liability, it would be necessary for Congress to provide explicit statutory remedies whenever it wants to hold DOD financially liable. Since Congress explicitly set forth the DOD's financial liability in sections 10 U.S.C. § 2701(c)(2) and 10 U.S.C. § 2701(d), 120 (a)(3) must otherwise exempt the DOD from financial liability.

10 U.S.C. § 2701(d) allows but does not require the DOD to, "enter into agreements on a reimbursable basis with any other Federal agency, and on a reimbursable or other basis with any State or local government agency, to obtain the services of that agency to assist the Secretary in carrying out any of the Secretary's responsibilities under this section."

As clarified under subsection (d), DOD is fully in charge of identifying, investigating, researching, developing, and implementing the cleanup of hazardous wastes on its facilities or vessels, and as such is liable for its own costs in pursuing these response actions. If the Secretary of Defense chooses, he *may* delegate some of these responsibilities to other federal agencies, states, or local governments. Only when the Secretary exercises his discretion and delegates his responsibilities to the state does DOD become liable for the costs incurred by the state. Furthermore, DOD is liable only to the extent that the costs are incurred pursuant to the agreement. It, therefore, directly follows that if the Secretary has not delegated his authority, and the state, local, or other federal authorities incur costs from their independent decision to participate, then DOD is not liable for these costs.

10 U.S.C. § 2701 (d) illustrates in two different ways that 120 (a)(1) does not hold DOD financially responsible. First, it shows that Congress had to state explicitly that the DOD would be liable for state response costs when the DOD requested the state to undertake these tasks. If 120 (a)(1) held DOD liable for all response actions, there would be no need to provide explicitly for liability in this circumscribed area. Secondly, since 10 U.S. § 2701 (d) only provides for reimbursement where the Secretary of Defense voluntarily entered into an agreement with the state to perform one or more of the Secretary's duties for him, negative inference can be drawn that the Secretary need not reimburse the state where the state's actions were unilaterally undertaken, or where these acts duplicate the Secretary's efforts.

10 U.S.C § 2701 (c)(3) provides,

> The Secretary shall pay fees and charges imposed by State authorities for permit services for the disposal of hazardous substances on lands which are under the jurisdiction of the Secretary to the same extent that nongovernmental entities are required to pay fees and charges imposed by State authorities for permit services. The preceding sentence shall not apply with respect to a payment that is the responsibility of a lessee, contractor, or other private person.

Without 10 U.S.C. § 2701(c)(3), DOD would not have to pay for state permits for the disposal of hazardous substances on its land. If the requirement[26] under 120(a)(1) is applied to financial liability, then DOD would automatically be required to pay for state permits. Thus, a specific requirement for the payment of such fees would be unnecessary and redundant. Therefore, the inclusion of 10 U.S.C § 2701(c)(3) implies that DOD is not subject to financial liability requirements under CERCLA.

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26. The requirement is that each department of the United States be subject to and comply with CERCLA in the same manner and to the same extent, both procedurally and substantively, as any nongovernmental entity.

B. Consistent with the National Contingency Plan

If the DOD's immunity has been waived, state expenditures must, nonetheless, still be reasonable and consistent with the National Contingency Plan to be reimbursed.[27]

Since state oversight, voluntarily undertaken by the state, entails supervising the response actions of DOD, state oversight necessarily entails duplicating the efforts of DOD. As such, the costs of any actions that duplicate those undertaken by the DOD should not be reimbursed. Additionally, if states conduct actions that are not undertaken by DOD and the state's actions are unreasonable, then these costs are not reimbursable.

II. CONCLUSION

The DOD is not liable for state oversight costs under CERCLA 107, which are incurred during the cleanup of a DOD facility. Congress has not expressly waived the DOD's sovereign immunity, and has, in fact, expressly provided that DOD is not financially liable for CERCLA 120 requirements. Therefore, DOD is not liable for other agencies' response costs unless DOD has entered into an agreement or contract whereby the contracting agency undertakes some of the DOD's responsibilities.

Furthermore, even if the DOD is not immune, and states are able to sue for their oversight costs, states are only able to recover that portion of their costs that do not duplicate actions undertaken by the DOD. Also, the state's actions cannot be unreasonable and must conform with the National Contingency Plan. Therefore, even in the unlikely event that the DOD is not immune, it is highly unlikely that states can recover their oversight costs.

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27. 42 U.S.C. § 9607(a)(4)(A)&(B) (liable for all costs not inconsistent with the National Contingency Plan); State of New York v. Shore Realty, 759 F.2d 1032, 1041 (2d Cir. 1985) (CERCLA precludes cost recovery of duplicative response actions (citing 42 U.S.C. § 9614 (b)); United States v. Dickerson, 600 F. Supp. 227 (M.D. Ga. 1987) (National Contingency Plan requires response actions to be cost-effective) (citing 42 U.S.C. § 9605(7)); 40 C.F.R. § 300.33 (3) (1986) (Department of Defense directs response actions and may designate capable state agencies to act as their on-scene representative, but they are not authorized to conduct cleanup unless an appropriate contract or cooperative agreement is established).

The National Environmental Policy Act: The Underused, Much-Abused, Compliance Tool

CAPTAIN JULIE FEGLEY, USAF

The National Environmental Policy Act of 1969 (NEPA)[1] was passed with little debate and what appeared to be little substance.[2] However, litigation over the past eighteen years has demonstrated that NEPA has teeth as well as the potential to affect federal actions in significant ways.[3] Viewed by some as a "paper exercise,"[4] the procedural requirements of NEPA[5] should have two real results. First, the stated purpose of NEPA, they should allow the agency's decision maker the ability to *understand* fully the environmental consequences of a given action. That is, they should help the decision maker determine whether a proposed action would have significant adverse environmental impacts and, if so, how to mitigate to avoid them. Where complete mitigation is not possible, the agency must prepare an Environmental Impact Statement (EIS) for any major federal action significantly affecting the quality of the human environment, to ensure full public review and due consideration of adverse environmental consequences before the decision is made to proceed with a given action.[6]

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1. National Environmental Policy Act of 1969 (NEPA), Pub.L. No. 90–190, 83 Stat. 852 (1970) (codified at 42 U.S.C §§ 4321–47).

2. The statutory language of NEPA sets out a general mandate and broad delegations of authority. The act created the three-member Council on Environmental Quality (CEQ) that was tasked with formulating "guidelines." 42 U.S.C. §§ 4341–47. These guidelines were originally held to be advisory only, as there was no authority under NEPA for the CEQ to prescribe regulations governing compliance with NEPA. Hiram Clarke Civic Club, Inc. v. Lynn, 476 F.2d 421 (5th Cir. 1973). These guidelines became mandatory regulations under a 1977 Presidential Order. Exec. Order No. 11, 991 (1978), 3 C.F.R. 124 (1978). *See* Andrus v. Sierra Club, 442 U.S. 347, 357 (1980). The guidelines are codified in Title 40 of the Code of Federal Regulations, part. 1500. The legislative history of NEPA is extremely abbreviated. E.g., the House Report and Conference Report are entirely contained in 22 pages of the U.S. Code Cong. and Admin. news. *See* 1969 U.S. CODE CONG. & ADMIN. NEWS at 2751–73.

3. Judge J. Skelly Wright, in the seminal case of Calvert Cliffs' Coord. Comm. v. United States A. E. Comm'n, 449 F.2d 1109 (D.C. Cir. 1971), correctly prophesied that the advent of NEPA would result in "a flood of new litigation." *Id.* at 1111 The case also provides the first interpretations of each section of NEPA, although subsequent case law would not go as far as Judge Wright in finding substantive aspects of NEPA. *See infra* note 4.

4. *Calvert Cliffs* identifies the first of many federal agencies that have been described as reluctant to comply with the directives of NEPA. "Again, the Commission's approach to statutory interpretation is strange indeed—so strange that it seems to reveal a rather thoroughgoing reluctance to meet the NEPA procedural obligations in the agency review process. . . ." *Id.* at 1119. *See also* 40 C.F.R. § 1500.4 regarding paperwork reduction, a policy not often followed by federal agencies when adherence could help delineate the real environmental issues in any action.

5. Early NEPA litigation resulted in a split among the circuits as to whether NEPA created any enforceable substantive rights. In Vermont Yankee Nuclear Power Corp. v. NRDC, 453 U.S. 519 (1979), the Supreme Court held that the mandate in NEPA is essentially procedural.

6. NEPA § 102(2)(C), 42 U.S.C. § 4332(2)(C), known as one of the "action—forcing" sections of NEPA, requires each federal action to "include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible office on—

(i) the environmental impact of the proposed action,

The second result of NEPA's procedural requirements is that consideration of NEPA early in the proposal and planning process should help ensure the project will be in compliance with the substantive requirements of other environmental laws and regulations. By fully considering these substantive environmental requirements throughout the NEPA planning process, the Air Force can ensure that we avoid environmental noncompliance in the future. However, this second result can be achieved only if the Air Force complies fully with the environmental impact analysis process (EIAP) required under NEPA and Air Force Regulation (AFR) 19–2. NEPA is the one environmental statute that addresses the total spectrum of environmental issues that may result from a proposed agency action. This article will discuss the "threshold determination" under NEPA for deciding if an EIS is necessary, and the most effective means of reviewing the EIAP at an installation to ensure compliance with both the procedural requirements of NEPA, and, more importantly, the substantive requirements of other environmental laws and regulations.

I. THE THRESHOLD DETERMINATION

When an action is first proposed, and an agency has determined that it is "major,"[7] there are three possible courses of action under NEPA: (1) the agency can make a categorical exclusion (CATEX) determination if the proposed action does not individually or cumulatively have a significant effect on the human environment,[8] and there is an appropriate CATEX category listed in the agency's regulations;[9] (2) the agency can prepare an environmental assessment (EA) to determine whether a finding of no significant impact (FONSI) can be made *or* whether an EIS must be prepared;[10] or (3) the agency can prepare an EIS in accordance with the requirements

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(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
(iii) alternatives to the proposed action,
(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented."

Consultation with other federal agencies is also required in preparing the statement and comments from state, local, and federal agencies must accompany the proposal through the review process.

7. 40 C.F.R. § 1508.18 states that "major" reinforces "significantly" and does not have a meaning independent of significantly. Therefore, if an action has the potential to affect significantly the human environment, it will be considered to be a "major" federal action regardless of how insignificant the overall proposal may appear to be. *Accord*, River Road Alliance, Inc. v. Corps of Engineers of United States Army, 764 F.2d 445 (7th Cir. 1985), where the court held that an action that might have a "grievous impact on the environment" would require an EIS even if the action can be deemed "minor." In that case, the action was to approve a permit for a "barge fleeting facility" (or, as the court called it, a maritime parking lot) for approximately 30 barges covering five acres of water along a scenic stretch of "Alton Lake" on the Mississippi River. "Indeed, the 'minor' action (implying few benefits) that may cause major environmental harms is a prime candidate for requiring such a statement; if the cost of preparing such a statement deters the action, there is little lost, and much gained. It seems best not to speculate further on the meaning of 'major,' but to assume that the Corps' action in authorizing the fleeting facility was major and to move directly to the issue of significant impact." *Id.* at 450. However, some courts have tried to define "major," which may depend on the "amount of federal funds expended, number of people affected, length of time consumed and extent of government planning involved." Como-Falcon Community Coalition, Inc. v. United States Dep't of Labor, 465 F. Supp. 850 (D.C. Minn. 1978), *aff'd* 609 F.2d 342 (8th Cir. 1979); Rysauz v. Harris, 457 F. Supp. 796 (D.C.S.D. 1978).

8. 40 C.F.R. § 1508.14 defines human environment as "the natural and physical environment and the relationship of people with that environment."

9. *See* Air Force Reg. (AFR) 19–2, Attachment 7. 40 C.F.R. § 1507.3 requires that categorical exclusions (CATEX) adopted by a particular agency must be promulgated in accordance with the rule-making procedures under the Administrative Procedures Act. 5 U.S.C. §§ 551–96.

10. This determination should be made after the review of the EA is completed, unless initial data collection indicates that an EIS will be required.

of section 102(2) of NEPA, the Council on Environmental Quality (CEQ) regulations[11] and any of its own EIAP regulations.[12]

Categorical exclusions are subject to limited internal review, are not normally released to the public and are usually supportable where the agency's approved list of categorical exclusions is sufficiently defined to enable a decision maker to quickly discern whether a proposed action is covered by a CATEX.[13] An EIS is subject both to lengthy agency review (and in the Air Force, this is often across both commands and organizations) and sets periods for public comment. Once an agency has decided to undertake the preparation of an EIS, the standard of review turns to whether the EIS is adequate.[14]

The threshold determination of whether a "detailed statement" would be required is accomplished through an EA, a document that, in the Air Force, receives "full but limited" agency review. That is, the review meets the requirement under NEPA of a systematic, interdisciplinary analysis,[15] but is normally limited to review within the proponent organization and its major command. This document subjects an agency to the greatest dangers of litigation because an EA is usually prepared with an agency's limited internal resources, but must demonstrate that the agency took a "hard look" at the potential environmental effects of an action before determining that a FONSI could be made.[16] Most agencies approach the preparation of an

11. *See* 40 C.F.R. pt. 1500.

12. 40 C.F.R. § 1507.3 requires agencies to formulate their own regulations to supplement the CEQ regulations. These regulations are as binding on each agency as the CEQ regulations and the procedural requirements of NEPA.

13. However, in applying a CATEX, the agency is required to comply with the substantive requirements of other environmental protection statutes. In National Trust for Historic Preservation v. Dole, 828 F.2d 776 (D.C. Cir. 1987), the petitioners alleged that the application of a CATEX was inappropriate for the fixture of suicide prevention barriers on an historic bridge. Although the court held that the application of a CATEX was reasonable, the fact that consultation with the Advisory Counsel on Historic Preservation had been accomplished in accordance with the National Historic Preservation Act, 16 U.S.C. §§ 470–470n, helped to support the agency's decision making process. For discussion on compliance with substantive requirements, *see infra* section V.

14. The initial determination is whether the EIS was prepared without observance of the procedure required under NEPA. Trout Unlimited v. Morgan, 509 F.2d 1276 (9th Cir. 1975). The question of what standard to apply in determining whether the agency complied with this procedure is one that has resulted in a split among the circuits, as well as within the circuits, in some cases. *Compare*, South Louisiana Environmental Council, Inc. v. Sand, 629 F.2d 1005 (5th Cir. 1980) (a Louisiana case holding that the standard is "arbitrary, capricious or an abuse of discretion") and Louisiana v. Lee, 758 F.2d 1081 (5th Cir. 1985) (another Louisiana case holding that the standard is one of reasonableness). The 1st, 2d, 4th, and 7th circuits recognize the "arbitrary, capricious, or an abuse of discretion" standard afforded agencies under the Administrative Procedures Act. *E.g., River Road Alliance, Inc.*, 764 F.2d 445 (7th Cir. 1985); Hanly v. Kleindienst, 471 F.2d 823 (2d Cir. 1972); Twitty v. North Carolina, 527 F. Supp. 778, *aff'd*, 696 F.2d 992 (4th Cir. 1981). The remaining circuits apply the reasonableness standard that grants the court more of a "de novo" review of the agency action, thereby giving NEPA some substantive attributes. Preservation Coalition, Inc. v. Pierce, 667 F.2d 712 (9th Cir. 1982); Conservation Law Foundation of New England, Inc. v. Andrus, 623 F.2d 712 (1st Cir. 1979); Wyoming Outdoor Coordinating Council v. Butz, 484 F.2d 1244 (10th Cir. 1973). The D.C. Circuit applies a unique four-part test, Sierra Club v. Peterson, 717 F.2d 1409 (D.C. Cir. 1983).

15. 42 U.S.C. § 4332(2)(A).

16. The D.C. Court of Appeals first formulated the standard of review for this threshold determination in Maryland-Nat'l Capital Park & Planning Comm'n v. United States Postal Service, 487 F.2d 1029, 1040 (D.C. Cir. 1973). Other jurisdictions have adopted the approach. Save the Yaak Committee v. Block, 840 F.2d 714 (9th Cir. 1988). That standard is: (1) the agency must have accurately identified relevant environmental concerns; (2) once the agency has identified the problem, it must have taken a "hard look" at the problem in preparing the environmental assessment; (3) if a finding of no significant impact is made, the agency must be able to make a convincing case for its findings, and (4) if the agency does find an impact of true significance, preparation of an EIS can only be avoided if the agency finds that changes or safeguards in the project sufficiently reduce the impact to a minimum. Sierra Club v. United States Dep't of Transportation, 753 F.2d 120 (D.C. Cir. 1985). The "hard look" standard was first articulated by the Supreme Court in Kleppe v. Sierra Club, 427 U.S. 390 (1976) to determine whether the agency had considered the environmental consequences of the proposed action.

EA with the preconception that it will result in a FONSI. This is not the intent of NEPA, nor does such a preconception allow the agency the required "hard look."

Where an EIS is questioned on the basis of adequacy (i.e., whether the decision maker was fully apprised of the environmental consequences of the proposed action before selecting the preferred alternative), an EA may be questioned both on whether, after taking a "hard look," it identified any potential environmental concerns and, if it did, whether it made a convincing argument that these concerns would not be significant. Where the agency fails to make this convincing argument, and the plaintiff can show a potential environmental impact, the agency can expect that an injunction will issue on the basis that the agency cannot support its assertion that the EA took the required "hard look" at potential environmental impacts.[17]

II. THE ADMINISTRATIVE RECORD

The preparation of an EA is not addressed in the statutory language of NEPA. Rather, the CEQ's implementing regulations[18] address the preparation of EA's. There is some guidance on when to prepare an EA,[19] who to involve in the prepara-

17. The standard for granting injunctive relief in a NEPA case is the same as in any litigation: (1) Whether the movants have established a strong likelihood of success on the merits; (2) whether the balance of irreparable harm favors the movants; and (3) whether the public interest favors granting the injunction. Enos v. Marsh, 616 F. Supp. 32 (D. Haw. 1984) *aff'd*, 769 F.2d 1363 (9th Cir. 1984). Although the presumptive remedy is to enjoin the activity of an agency until the procedural requirements of NEPA are met, a court will normally not issue an injunction if the decision maker is otherwise fully informed as to the environmental consequences of the proposed action. However, irreparable harm may be implied in an action to enforce NEPA where there is a failure to evaluate fully the environmental impact of the proposed action. *Id.* at 36. Warm Springs v. Gribble, 621 F.2d 1017 (9th Cir. 1980). And where the agency has determined that it is not necessary to accomplish an EIS, that determination should be convincingly made. In McDowell v. Schlesinger, 404 F. Supp. 221 (W.D. Mo. 1975), the Secretary of the Air Force had announced on 22 November 1974, that the Air Force intended to transfer approximately 2000 military positions and 800 civilian positions from Richards-Gebaur Air Force Base, Missouri, to Scott Air Force Base, Illinois. The plaintiffs, civilian employees at Richards-Gebaur, filed suit alleging that the Air Force had failed to comply with NEPA. The district court issued a temporary restraining order prohibiting the Air Force from implementing the proposed action on 2 May 1975. The final injunction issued on 9 July 1975. The court found that the Air Force's environmental assessment failed to assess adequately the potential impacts. "In making [the determination], the agency must avoid making bald conclusions as to the magnitude or variety of potential effects of the proposed action. Similarly, the agency is not permitted to base a negative decision [to prepare an EIS] upon superficial reasoning or perfunctory analysis." *Id.* at 250. The court also pointed out language in the EA that stated, "the Air Force and the Committee are ready to assist these community leaders to greatly reduce the potential environmental impact." *Id* at 232. This strongly indicated to the court that the Air Force had not *completed* the environmental analysis before making a FONSI, as well as that the Air Force recognized that potentially significant environmental impacts existed. The Air Force did not appeal the court's decision; instead, it undertook the preparation of an EIS. The EIS was issued on 12 January 1977. On 25 March 1977, the Secretary of the Air Force again announced the decision to move the units. On 22 June 1977, civilian employees at Richards-Gebaur again filed suit against the Air Force. No injunction was issued. The district court held that the EIS was adequate, and on appeal, the Eighth Circuit Court of Appeals affirmed that decision. Jackson County, Mo. v. Jones, 571 F.2d 1004 (1978). What is interesting about the case is that the only significant impacts identified were socioeconomic ones. When an action has a primary impact on the natural environment, secondary socioeconomic effects may also be considered in the EIS; however, when the threshold requirement of a primary impact on the physical environment is missing, socioeconomic effects are insufficient to trigger an agency's obligation to prepare an EIS. Council on Environmental Quality Regulations, 40 C.F.R. § 1500.8(a)(3)(ii)(1975). Image of Greater San Antonio, Texas v. Brown, 570 F.2d 517 (5th Cir. 1978); Como-Falcon Community Coalition v. United States Dep't of Labor, 609 F.2d 342 (1979); Olmsted Citizens for a Better Community v. United States, 793 F.2d 201 (8th Cir. 1986).

18. 40 C.F.R., pt. 1500.

19. *Id.* at § 1501.3.

tion,[20] who has responsibility for its preparation,[21] its contents,[22] making a FONSI,[23] and availability for public review of the FONSI.[24]

Air Force Regulation 19–2, "Environmental Impact Analysis Process," delineates the analysis process for the Air Force.[25] Paragraph 9(e) references the CEQ definition of an environmental assessment. Paragraph 9(f) describes alternatives, including the "no action" alternative, which must always be considered.[26]

The Air Force, by the nature of its business, is an agency that has a tendency to receive heightened public scrutiny. The Air Force attorney should, therefore, recognize that having suit brought in regard to a particular project is not unexpected. However, this knowledge increases the need and the responsibility to ensure that the administrative record for any project is complete and legally sufficient.[27] NEPA compliance is a classic administrative law process. Defending a NEPA case is usually a matter of providing the administrative record to the court, briefing the issue

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20. *Id* at § 1501.4(b). This section is often overlooked by agencies when preparing an EA. Consulting with other agencies can help mitigate the potential impacts of an action, whether significant or not; however, many agencies believe that they are allowed to prepare an EA without the interaction of other agencies or the public. Failure to do so can well support a claim that an agency failed to take the required "hard look" at the action. From a practical standpoint, if an EIS is later determined to be necessary, interagency coordination and early comments from the public accomplished during the preparation of the EA can help to define the scope of the potentially significant impacts of a project. This coordination can also alert an agency early to the potential existence of significant impacts, so that the agency can begin preparation of the EIS and not waste further time on an EA that will not be capable of supporting a FONSI. 40 C.F.R. § 1501.7(b)(3) requires agencies to combine the EA process with the scoping process to accomplish this.

21. 40 C.F.R. § 1506.5(b).

22. *Id*. at § 1508.9(b). The regulation states that an EA "[s]hall include brief discussions of the need for the proposal, of alternatives as required by section 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted." In Borough of Morrisville v. Delaware River Basin Comm'n, 399 F. Supp. 469 (D.C. Del. 1975), the district court held that an EA which results in a FONSI need not discuss alternatives since the proposed action has no significant impact on the quality of the human environment. Although this appears to be logical, it presupposes that a FONSI will result from the analysis, since alternatives are formulated at the beginning of the EIAP. Proposed alternatives and their potential environmental impacts can be presented more concisely than they would be in an EIS, but they should be identified and their environmental impacts briefly discussed. *Also, see* Trinity Episcopal School Corp. v. Romney, 523 F.2d 88 (2d Cir. 1975) holding that section 102(2)(D) [actually (E); it was originally cited as (D) in the Senate conference report] of NEPA requires federal agencies to consider alternatives without regard to the filing of an EIS. Finally, 40 C.F.R. § 1508.9(b) states that EA's must include alternatives when section 102(2)(E) of NEPA requires (that is, when any proposal involves unresolved conflicts concerning alternative uses of available resources).

23. 40 C.F.R. § 1508.13.

24. *Id*. at § 1501.4(C)(2).

25. The Air Force practitioner should also be familiar with AFR 19–8, Environmental Protection Committee and Environmental Reporting; AFR 19–9, Interagency and Intergovernmental Coordinator of Land, Facility and Environmental Plans, Programs and Projects; AFR 126–1, Conservation and Management of Natural Resources; and AFR 126–7, Historic Preservation when reviewing Air Force EIAP documentation.

26. Analysis of the "no action" alternative requires more than a statement that if a particular action cannot take place, a certain mission cannot be performed or evaluated. The import of the "no action" alternative is its environmental consequences. The "no action" alternative frequently has environmental consequences; i.e., the decision not to build a levee may result in increased or continued flooding, which may cause environmental damage. In CARE, Inc. v. FAA, 844 F.2d 1569 (11th Cir. 1988), the court noted that the "no action" alternative to building a runway extension would result in greater noise impacts than the proposed action, which required built—in mitigations that helped to alleviate the preexisting problems.

27. Normally, an agency is limited to the administrative record in determining whether a FONSI is supportable. Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402 (1971). However, when it appears that the agency has relied on documents not included in the record or where the plaintiff can make a showing of agency bad faith, additional discovery is permitted to supplement the record. Animal Defense Council v. Hodel, 840 F.2d 1432 (9th Cir. 1988). Of course, these exceptions are not for the benefit of the agency.

of the standard of threshold review in the particular circuit, and waiting for a result. Because of the need to rely on the administrative record, it is imperative that it be accurate and complete. The administrative record for an EA that results in a FONSI should consist of the following:

(1) AF Form 813: Request for Environmental Impact Analysis. This document requires the requestor to provide the "Purpose and Need for Action Statement" and a Description of the Proposed Action and Alternatives (DOPAA). The AF Form 813 is the heart of the EIAP. If the Purpose and Need Statement and the DOPAA are incomplete at this stage, they do not provide an adequate basis for the preparer of the EA to assess the potentially significant environmental impacts of an action and its alternatives. Any subsequent change in the DOPAA will result in a concomitant need to reassess the environmental impacts. The preparer must work closely with the proponent to resolve these issues as they arise.

(2) AF Form 814: Preliminary Environmental Survey. The preparer should use this assessment to cull out those environmental resources that could not possibly be impacted by the proposed action and, therefore, do not have to be discussed in the EA.[28]

(3) The EA: The environmental assessment should be a concise document that summarizes the proposed action and its alternatives, the purpose of and need for the action, and its possible environmental impacts. The EA should include any mitigations that are part of the proposed action, are required by law, or have been developed during the analysis process, as well as the expected effectiveness of these mitigations when implemented. The AF Forms 813 and 814 should be incorporated by reference, as well as any study, report or EIS/EA relied upon by the preparer in assessing the potential environmental impacts. The EA should also include a list of persons and agencies consulted during the EIAP. Letters showing consultation with other agencies as required by other environmental laws and regulations[29] should be included in the appendix, plus any reports required under consultation that were prepared as a result of the proposed action.[30] Attorneys defending NEPA suits should welcome a broad, searching inquiry of potential environmental consequences. Most circuits require some variant of the "hard look" standard. A wide, searching inquiry documented by a listing of persons and agencies consulted and evidence of responses helps to validate the depth of the agency's effort and can provide the "convincing" argument that no resources will be significantly affected by the proposed action.

(4) The FONSI: The FONSI should summarize the findings of the EA and identify those mitigation measures that must be undertaken as part of the proposed action. It should also indicate whether a thirty-day waiting period is required before the proponent can undertake the action in accordance with CEQ regulations and AFR 19–2, paragraph 11(f)(1–4). Finally, the signature page should evidence that all parties required to review and approve the EA and FONSI have done so.[31]

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28. 40 C.F.R. § 1500.5(d).

29. *E.g.*, section 7 consultation under the Endangered Species Act, 16 U.S.C. §§ 1531–43; section 106 consultation under the National Historic Preservation Act, 16 U.S.C. §§ 470a–470w–6; and a consistency determination under the Coastal Zone Management Act, 16 U.S.C. §§ 1451–64.

30. *E.g.*, a biological assessment under the Endangered Species Act or a survey of historic sites under the National Historic Preservation Act. If these reports are lengthy, they should be summarized in the EA and incorporated by reference instead. They should be, of course, readily available to the public upon request.

31. AFR 19–21, change 1 (10 Feb. 1987) deleted AF Form 815—The Environmental Assessment Certificate. However, *see* AFR 19–8, Environmental Protection Committees and Environmental Reporting for review requirements.

The installation environmental coordinator should maintain the administrative record, in consultation with the base legal office. The FONSI should be released to the public in accordance with CEQ regulations.

III. MITIGATION MEASURES

Under some circumstances, if a proposed action's significant impacts can be mitigated sufficiently to obviate them or result in nonsignificance, an agency can make a FONSI instead of preparing an EIS. The CEQ defines mitigation as: (a) avoiding the impact altogether; (b) minimizing the impacts by limiting the degree or magnitude of the action; (c) rectifying the impact by repairing or restoring; (d) reducing or eliminating the impact by preservation and maintenance operations during the life of the action; and (e) compensating by replacing or providing substitute resources or environments.[32] The CEQ has stated that these mitigation measures can only be relied upon to make a FONSI "if they are imposed by statute or regulation, or submitted by an applicant or agency as part of the original proposal."[33] However, several courts have held that mitigation measures that are developed as part of the EIAP and are to be undertaken as part of the action can be relied upon to avoid the preparation of an EIS.[34] Nonetheless, the agency's commitment to performing the mitigation measures must be evidenced in order to rely upon those measures in lieu of an EIS.

Mitigation measures should be developed early in the planning process when an action is first contemplated. Consultation with other agencies (state, local, and federal) should be undertaken to help identify mitigation measures that can be addressed at an early stage. Installations should recognize that consultation will help avoid delays in construction or project implementation. Certainly, the award of a contract prior to completion of EIAP can be interpreted as committing resources so as to prejudice the selection of alternatives before making a final determination.[35] Also, a court will be ill-disposed to accept a FONSI made subsequent to the award of a contract for a project if a plaintiff raises *any* tenable potential impact. This subjects an installation to unnecessary litigation as well as the possibility of preparing an unnecessary EIS, or even a temporary restraining order (TRO) against work being done under the contract. The TRO can then provide the basis for contract claims

32. 40 C.F.R. § 1508.20. Currently, there are two cases before the Supreme Court in mitigation measures. Specifically, these cases raise the question whether NEPA imposes a *substantive* duty on agencies to mitigate environmental harm. Oregon Natural Resources Council v. Marsh, 832 F.2d 1489 (9th Cir. 1987) *petition for cert. filed,—(No. 87–1704)*; Methow Valley Citizens Council v. Regional Forests, 833 F.2d 810 (9th Cir. 1987) *petition for cert. filed,—(No. 87–1703)*.

33. Council on Environmental Quality Questions and Answers on National Environmental Policy Act Regulations (The Forty Most Asked Questions), published at 46 Fed. Reg. 18,026, March 23, 1981. Question and Answer 40. The "Forty Questions" has been held to be an informal statement, not a regulation (similar to the "guidelines" prior to the 1977 Presidential Order); therefore, it is not always "persuasive authority." Cabinet Mountains Wilderness v. Peterson, 685 F.2d 678 (D.C. Cir. 1982).

34. In Friends of the Earth v. Hintz, 800 F.2d 822 (9th Cir. 1986), where mitigation agreements allowing "off-set" agreements, *i.e.*, replacement of lost wetlands, are explicitly allowed in Corps of Engineers regulations in evaluating issuance of a section 404 permit, the CEQ requirement is probably met. However, in *Cabinet Mountains Wilderness*, 685 F.2d, 678, the Forest Service required certain mitigation measures before approving exploratory mineral drilling operations; however, these measures are not contemplated in their regulations. *See also*, Preservation Coalition, Inc. v. Pierce, 667 F.2d 851 (9th Cir. 1982); Sierra Club v. Alexander, 484 F. Supp. 455 (N.D.N.Y. 1980). As the court in *Cabinet Mountains Wilderness* notes, this is the logical result. "To require an EIS in such circumstances would trivialize NEPA. . . ." *Id.* at 682.

35. 40 C.F.R. § 1502.2(f).

against the Air Force. Base-level contracts attorneys should during their review of contracts to be let for bid ensure that all EIAP work has been completed.

Mitigation can best be accomplished when the people involved in the planning function are aware of the potentially significant environmental features of the installation. Some of this can be accomplished through archeological surveys[36] and biological assessments. The formulation of management plans that provide a means to protect these resources, and which are available for the base planning function to take into account when an action is proposed can help sustain a FONSI and, hence, avoid the necessity of preparing an EIS. These plans can also help show the public that the Air Force is interested in ensuring that the natural resources it holds in trust are protected. But one caveat should be considered: Sometimes preparatory work can lead to environmental damage and a TRO. In one recent Air Force case, a contractor using a bulldozer and other intrusive methods was surveying a proposed site for the Ground Wave Emergency Network (GWEN) prior to award of the contract to build the required tower and prior to the completion of the environmental analysis. Further intrusive work was enjoined by the court.[37] Relevant to the issue of preliminary work on the installation, Senator Claiborne Pell of Rhode Island stated, "When a bulldozer plows the countryside, most people call it excavation."[38] Even if the work was preliminary site surveying, it was characteristic of construction activities as far as the public was concerned.

IV. METHODOLOGY

Before beginning preparation of either an EA or an EIS, an agency should determine its methodology for assessing the "significance" of environmental effects.[39] Significance varies with the setting of the proposed action. After assessing the current baseline on a particular resource, the preparer should determine what kind of increase or impact would reach the level of significance, considering the unique qualities of the proposed setting. Failure to develop this methodology makes it difficult to determine the basis for a finding that an impact is not significant.[40]

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36. Federal agencies were first given direction in Exec. Order No. 11,593 (May 13, 1971) to "locate, inventory, and nominate to the Secretary of the Interior all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for listing on the National Register of Historic Places." This was to be accomplished no later than 1 July 1973. This requirement was codified at 16 U.S.C. § 470h–2 (1980) and established a continuing responsibility to do this to ensure that "any such property that might qualify for inclusion is not inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate significantly."

37. Conservation Law Foundation of New England, Inc. v. United States Dep't of the Air Force, Civil Action No. 87–1871–K (D.C. Mass. 1988).

38. Borg, *O'Neil, Air Force Clash Over GWEN* Providence Journal-Bulletin, Nov. 24, 1987, at 13.

39. 40 C.F.R. § 1508.27 defines the term "significantly."

40. The fact that state statutes or local ordinances are not enforceable against the United States for reasons of sovereign immunity does not render those statutes or ordinances insignificant. In fact, the CEQ regulations specifically require the agency to look at whether (as opposed to evaluating "the degree") the action threatens the violation of Federal, State or local law or requirements imposed for the protection of the environment. 40 C.F.R. § 1508.27(10). When local zoning regulations and procedures are followed in site selection decisions by the Federal Government, there is a presumption that there would be no greater environmental effects than those recognized by the local residents through their zoning procedures. However, when the Federal Government exercises its sovereignty to override local zoning protections, there should be greater scrutiny. Maryland-Nat'l Capital Part & Planning Comm'n. v. United States Postal Service, 487 F.2d at 1036–37. Considering these factors and determining their relevance to the proposed action must take place prior to data gathering on the potential impacts.

V. COMPLIANCE WITH OTHER LAWS

Compliance with NEPA, as earlier stated, is procedural in nature. However, other environmental laws and regulations require an agency to comply with substantive requirements. By consulting with other agencies early to identify necessary permits and other requirements, an agency can satisfy both the procedural requirements of NEPA and the substantive requirements of other environmental statutes. Further, by understanding and complying with the substantive requirements early in the process, mitigation measures can be identified that reduce potentially significant impacts to nonsignificance. For instance, identifying wetland areas that would require cut and fill as part of the construction activity into a wetland, may foreshadow a significant impact on this resource. However, application for a section 404 permit under the Clean Water Act,[41] wherein the permit allows the fill activity on the condition that other wetlands are created to replace them, has been interpreted as reducing the impact on the resource to the point of nonsignificance.[42] Identifying necessary air permits and discharge permits during the initial planning process can also identify to the contractor what permits will be necessary and can help ensure that they are obtained prior to operating the facility. In turn, steps can be taken to verify that the facility will be able to meet the state and federal emissions or discharge standards.

This planning is especially important in meeting requirements under the Clean Air Act for nonattainment areas (again, a requirement that is based upon the unique setting which can cause an action to be "significant"). Further, by analyzing potentially hazardous substances that may be produced as a result of an action, determining state and federal requirements for their disposal and describing how these requirements will be met in the EIAP, the Air Force will avoid responsibility for the improper or illegal placement of these substances in facilities that are not authorized for their disposal. For example, the Air Force recently undertook the investigation of the disposal of concrete in a solid waste landfill. The concrete had been used in testing a polymer for Rapid Runway Repair (RRR). The polymer was subsequently discovered to contain perchlorethlene (PCE). The concrete was also subsequently discovered to leach. Neither the state involved nor the landfill owner was apprised of the fact that the concrete contained PCE because neither the Air Force nor the contractor knew that the polymer contained PCE at the time it was placed in the landfill. The leaching must now be investigated and, possibly, remediated. This costly process could have been avoided through the proper analysis of the action when it was first proposed.

The requirements of certain substantive statutes should always be undertaken as part of the EIAP. This is particularly true of those statutes that require consultation as part of a determination of significance, or require permitting as part of a compliance strategy that will mitigate potentially significant impacts. For instance, until consultation is completed in accordance with section 106 of the National historic Preservation Act, no federal undertaking[43] can take place which could adversely affect a historic property that is included on or eligible for inclusion in the National Register of Historic Places. If an agency finds that a proposed action could impact a potentially eligible property, it must give the Advisory Council on Historic Preservation (ACHP) an opportunity to comment before making a finding of no adverse

41. The Federal Water Pollution Control Act, 33 U.S.C. § 1344.
42. As discussed earlier, Friends of the Earth v. Hintz, 800 F.2d 822.
43. "Neglect" is considered an adverse effect as well as an undertaking under Advisory Council on Historic Preservation (ACHP) regulations, 36 C.F.R. pt. 300.

effect. Mitigation measures, whether or not concurred in by the ACHP,[44] can reduce a significant impact to nonsignificance so that an agency can reach a FONSI. Under the Clean Air Act, NEPA analysis and coordination with the appropriate regulating agency can help determine whether permits will be needed both to construct and to operate, as well as ensure that the facility's design will meet applicable state and federal requirements.

Failure to comply with the procedural requirements of NEPA can result in an injunction and/or a requirement to prepare an EIS, as well as give rise to Equal Access to Justice Act[45] claims which are normally paid out of agency funds. Once an agency complies with the procedural requirements, "an informed decision-maker is entitled to be arguably 'wrong' "[46] so long as the error follows a searching inquiry. However, when assessing the impacts on a threatened or endangered species under the Endangered Species Act,[47] the decision maker does not have the authority to be "wrong." An agency, in consultation with and with the assistance of the Secretary of the Interior, must ensure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. This is termed "Section 7" consultation.[48] If the Secretary of the Interior finds, through his delegee, that the action would result in either an impact on the continued existence of the species or on its critical habitat, and that there are no mitigation measures to compensate for it, then the agency's only recourse is to seek an exemption through the Act[49] or through legislation.[50] And, like the personal liability to which commanders are subject under the Clean Air Act and other acts regulating toxic and hazardous substances and wastes, there is personal liability for both civil and criminal penalties under both the Historic Preservation Act and the Endangered Species Act.[51]

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44. Failure to receive ACHP concurrence could indicate "controversy" regarding the agency's conclusion on the particular effect of the action and thus suggest that an EIS is required. 40 C.F.R. § 1508.27(4); AFR 19–2, para. 9(a)(3) and (4).

45. 28 U.S.C. § 2412(b). Additionally, most of the substantive statutes allow recovery of attorney fees for substantially prevailing parties. For example, the Endangered Species Act, 16 U.S.C. § 1540(g)(4); the National Historic Preservation Act, 16 U.S.C. § 470w–4.

46. North Slope Borough v. Andrus, 642 F.2d 589, 599 (D.C. Cir. 1980). Or as Judge Trask stated in Matsumoto v. Brinegar, 568 F.2d 1289, 1290 (9th Cir. 1978), "Review of the decision on the merits of the proposal is not required by NEPA. The project when finished may be a complete blunder—NEPA insists that it be a knowledgeable blunder."

47. As best recognized by the Tennessee Valley Authority (TVA) in Hill v. Tennessee Valley Authority, 549 F.2d 1064 (6th Cir. 1977) (also known as the "Snail Darter" case) where the court reversed the district court opinion and held that procedural deficiencies under the Endangered Species Act can only be remedied through the issuance of an injunction. As the Supreme Court later held in Tennessee Valley Authority, 437 U.S. 153 (1978), the plain intent of Congress in enacting the Endangered Species Act of 1973 was to halt and reverse the trend towards species extinction, no matter the cost. *Id.*, at 187. Also note the Court's reference, same page: "Congressman Dingell's discussion of Air Force practice bombing, for instance, obviously pinpoints a particular activity—intimately related to the national defense—which a major federal department would be obliged to alter in deference to the strictures of Section 7 [of the Endangered Species Act]."

48. Section 7 of the Endangered Species Act of 1973, 16 U.S.C. §§ 1531–43.

49. 16 U.S.C. § 1536(h). An exemption can be sought and will be granted for any agency action if the Secretary of Defense finds that such exemption is necessary for reasons of "national security." 16 U.S.C. § 1536(i).

50. As eventually occurred in the TVA case to complete the Tellico Dam. The dam was later challenged, unsuccessfully, in Sequoyah v. Tennessee Valley Authority, 620 F.2d 1159 (6th Cir. 1980) under the first amendment. The allegation, by two bands of the Cherokee Indian nation and three Cherokee Indians as individuals, was that the land proposed to be flooded by the dam was sacred to the Cherokee religion.

51. Both the National Historic Preservation Act (16 U.S.C. §§ 470ee, 470ff) and the Endangered Species Act (16 U.S.C. § 1540(a) and (b)) provide for criminal and civil penalties. Although there are

VI. CONCLUSION

NEPA is here to stay. Since environmental impact analysis must be performed, it is in the Air Force's best interests to ensure that each proposed action is fully, and even exhaustively, analyzed. By using NEPA as the planning tool it was originally conceived to be, rather that the "paper exercise" it has become in the Air Force, we can better avoid environmental mistakes in the future. Proper planning may cost more at the outset of the program; yet it will help us avoid the costly subsequent cleanups in which we are now engaged across the country. While the Air Force's Environmental Compliance Assessment and Management Program (ECAMP) is intended to inform the Air Force where it needs to correct *existing* compliance programs, the NEPA process should be used proactively to identify *potential* areas of noncompliance, to ensure that proper planning will result in compliance long in the future, as well as at the beginning of operations. Perhaps in that way, ECAMP will ultimately become a program for letting the public know how well we are doing, not how poorly.[52]

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no documented cases where federal employees have been prosecuted under either of these statutes in connection with a failure to meet their responsibilities under the Acts prior to authorizing a project or participating in it, there is no reason why they would be exempted. A knowing taking of an endangered species without a permit or in violation of the mitigations required by the section 7 consultation could result in criminal prosecution under the Endangered Species Act in th same way that a federal employee may be liable for a knowing violation of the Clean Air Act or ıe Clean Water Act.

52. NEPA was conceived to be an environmental full-disclosure law "int nded to effectuate substantive changes in decision making in federal agencies." Environmental Defense Fund v. Corps of Engineers, 470 F.2d 289, 297 (8th Cir 1972).

The Air Installation Compatible Use Zone Program: The Science and the Law

LIEUTENANT COLONEL BERNARD K. SCHAFER, USAF

The purpose of this article is to give the typical base-level attorney a no frills understanding of the Air Installation Compatible Use Zone (AICUZ) program. For those who have been tapped to be the office expert on AICUZ, or who need just a basic understanding of the program so you can render a quick opinion, this article is for you—the science and law that surround the AICUZ program in a nutshell.

At its most basic, AICUZ is a planning program that determines the impact of aircraft operations on the communities surrounding our airfields, and transmits this information to local planning and zoning commissions for their use in the local comprehensive planning process. AICUZ seeks to identify the *zones* around an *air installation* that are impacted by aircraft operations, and to recommend uses for the land surrounding the air installation that are *compatible* with these zones. The intent is that these suggested uses will be implemented by civilian planning authorites.

The reason this is done is to protect the Air Force flying mission and the general public from the negative effects of incompatible development—industrial, commercial, and residential. The accident potential and noise associated with military airfields have created conflicts between the military and these community developments. For example, in the early 1970's, Laredo Air Force Base, Texas, was closed and air operations at Lowry Air Force Bases, Colorado, were halted in part due to conflicts with local communities.

In 1971 this pressure on air operations resulted in the recognition that a new program needed to be initiated to coordinate air installation activities with local community development. In its original form this program was a proposal called the Greenbelt Program. In 1973 then Air Force Lieutenant Gary Vest took the idea, which had been known since 1972 as AICUZ, and refined it into the six-phased process we know today. Gary Vest has since become the Deputy Assistant Secretary of the Air Force for Environment, Safety and Occupational Health (SAF/RQ).

According to Air Force Regulation (AFR) 19–9, para.3–3, AICUZ has two interrelated objectives: first, to protect Air Force installation operational capability from the effects of incompatible land use; and second, to assist local, area wide, state, and federal officials in protecting and promoting the public health, safety, and welfare by providing information on aircraft accident potential and noise. AICUZ achieves these objectives by determining the location of accident potential zones around our installations, and by determining the amount and location of noise patterns created by departing and landing aircraft. AICUZ does all this through several different regulations and policy guidance documents such as AFR 19–9; AFR 86–14; Department of Defense Instruction (DODI) 4165.57; the AICUZ Handbook (1984); and Air Force Manual 19–10 "Planning in the Noise Environment."

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I. THE SCIENCE

AICUZ is concerned with the impact of aircraft operations in two dimensions—where aircraft might crash, and where aircraft make a lot of noise. In terms of where aircraft might crash, AICUZ is concerned with only two parameters: obstructions to departing and landing aircraft, and the areas around the runways where accidents happen most often to departing and landing aircraft.

A. Obstructions

Obstructions are man-made and natural structures or activities that protrude into the airspace surrounding an airfield. They fall into three categories: electronic emissions, visible emissions (e.g., smoke), and height (e.g., radio antennas). Limitations on all three categories of obstructions are bolstered by similar obstruction limitations generated by the Federal Aviation Administration (FAA). Air Force Regulation 86–14, chapter 3, contains detailed diagrams of the standard zones surrounding air installations into which such nonelectronic obstructions should not intrude.

Basically, there are only two sets of dimensions for these obstruction zones, and they depend on whether there is a "Class A" or a "Class B" runway. The class of runway depends on the types of aircraft which primarily use the air installation. DODI 4165.57, Air Installations Compatible Use Zones, at enclosure 2, lists the types of aircraft that define the class of runway. Class A runways are normally for light aircraft (e.g., C–12, C–21, and T–28), and Class B runways are for heavy or high performance aircraft (e.g., T–38, F–15, C–130, and B–52). Air Force runways are almost exclusively Class B; one of the few Class A runways is at Maxwell Air Force Base, Alabama. It is very difficult to portray, concisely, the dimensions of these obstruction zones. To provide a flavor of what these zones look like, extracts from AFR 86–14 are presented in regards to Class B runways. (See charts 1, 2, and 3 at pages 167–169).

What the reader should take away from this third drawing is that as long as a physical obstruction stays below the various planes portrayed in this diagram, there is generally no conflict as far as the standard AICUZ model is concerned.

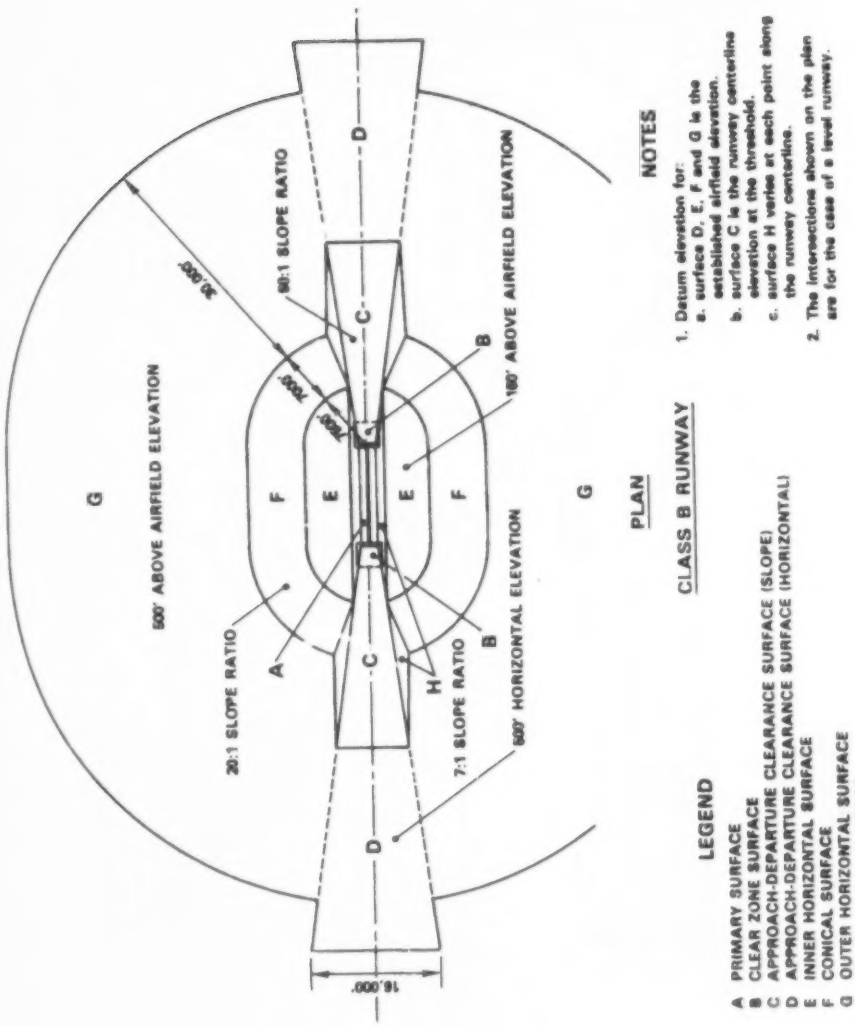
B. Accidents

The most obvious aspect of where aircraft might crash—the areas around the runways where accidents are experienced most often by departing and landing aircraft—is also dependent on standard determinations made by the Department of Defense (DOD). The Air Force conducted the original studies, and DOD incorporated the idea into an Instruction in 1977, three years after the Air Force implemented AICUZ. In other words, each air installation does not do an analysis of where it has experienced accidents and then set up its own accident potential zones. Instead, their accident data has been centralized at DOD level for use in the development of a standard set of Accident Potential Zones (APZ's).

There are three types of APZ's located at the ends of each active runway. These APZ's reflect a decreasing likelihood of an accident the farther one is from the end of the runway. The location and size of these APZ's depend on whether the runway is Class A or Class B. Their location and size are the results of an Air Force study of 369 aircraft mishaps from 1968 to 1972 that occurred within a 10 nautical mile

CHART 1

Obstruction Diagram Overhead View



PLAN

CLASS B RUNWAY

LEGEND

A PRIMARY SURFACE
B CLEAR ZONE SURFACE
C APPROACH-DEPARTURE CLEARANCE SURFACE (SLOPE)
D APPROACH-DEPARTURE CLEARANCE SURFACE (HORIZONTAL)
E INNER HORIZONTAL SURFACE
F CONICAL SURFACE
G OUTER HORIZONTAL SURFACE
H TRANSITIONAL SURFACE

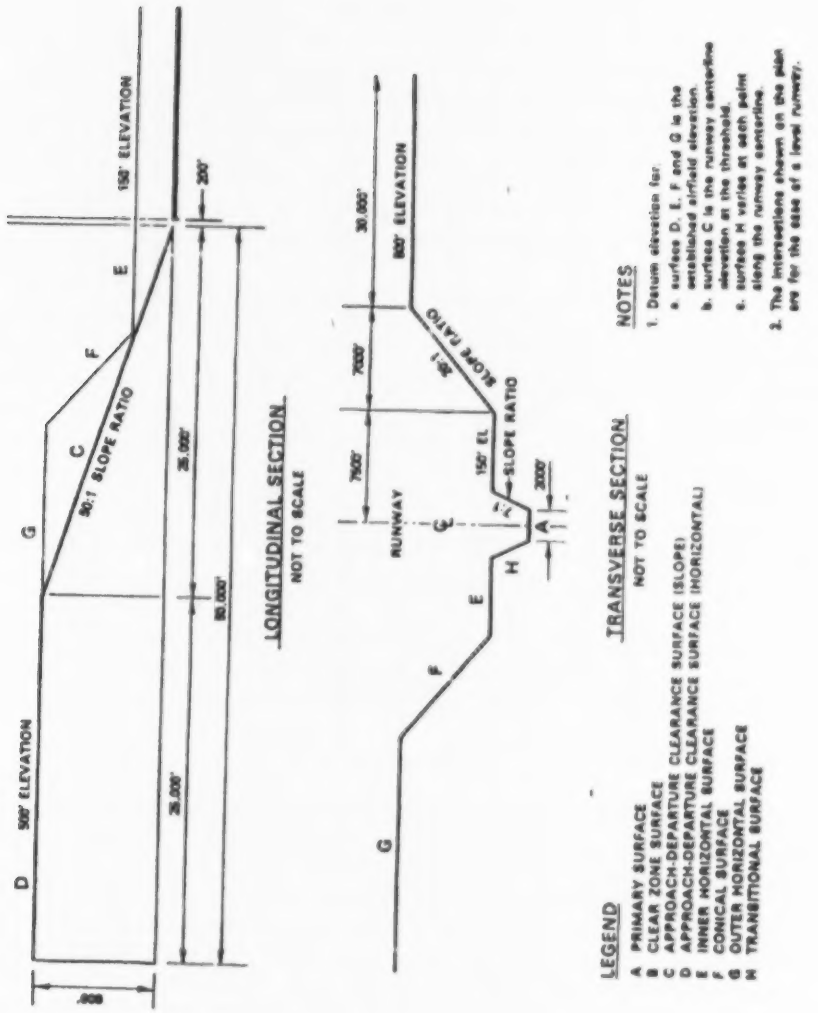
NOTES

1. Datum elevation for:
   a. surface D, E, F and G is the established airfield elevation.
   b. surface C is the runway centerline elevation at the threshold.
   c. surface H varies at each point along the runway centerline.
2. The intersections shown on the plan are for the case of a level runway.

Source: Air Force Regulation 86-14.

CHART 2

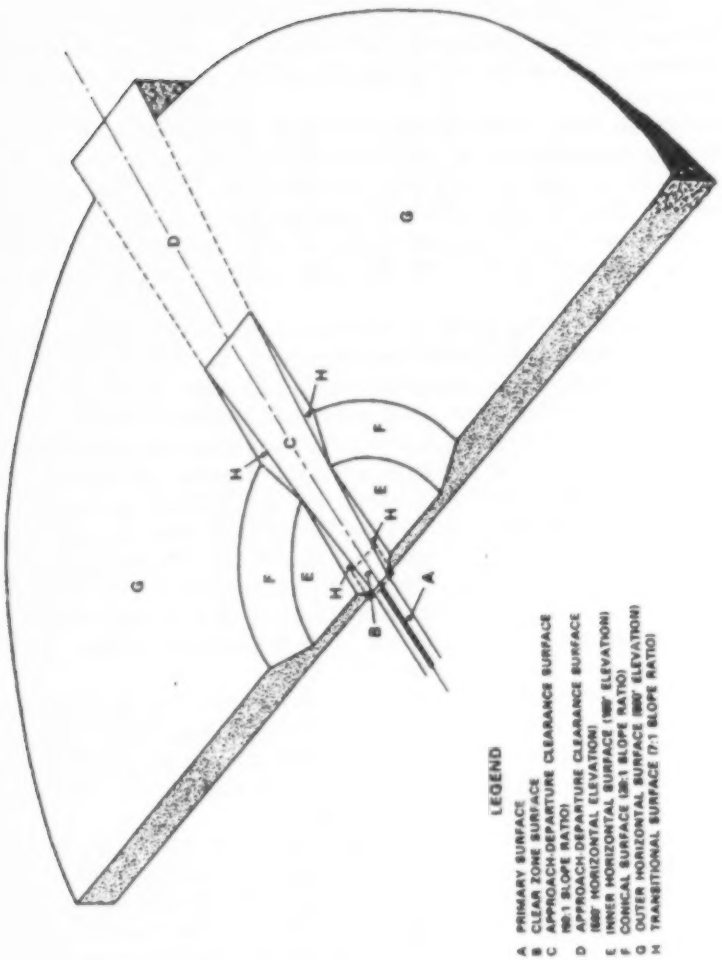
Obstruction Diagram Ground Level View



Source: Air Force Regulation 84-14.

CHART 3

Obstruction Diagram 3-D View



Source: Air Force Regulation 86-14.

radius of airfields. This study showed that thirty-nine percent of all the accidents studied occurred in a zone 3000 feet long and wide at both ends of the runway. The name coined for this zone is the Clear Zone (CZ).

A total of 7.9% of all the accidents occurred in the next zone beyond the CZ, an area 5000 feet long and 3000 feet wide. This zone is called APZ I. Secondly, 4.9% of the accidents studied occurred in the area 7000 feet long and 3000 feet wide. This zone is called APZ II. To complete these accident statistics, 22.8% of the accidents occurred on the runway; and 25.4% occurred outside the runway, CZ, and APZ's, within a 10 nautical mile radius of the airfield. In the sleight-of-hand world of statistics, however, these percentages do not reflect a true statistical probability of an accident, but instead reflect the percentages of accidents that have occurred within these chosen areas.

As a result of this study, the boundaries of the CZ, APZ I, and APZ II for Class B runways become formalized as the accident potential zones within which development would be discouraged. As for Class A runways, the dimensions of these zones were reduced to reflect the equally reduced size and danger of the aircraft operating there. As a result, for Class A runways, the CZ is 3000 feet long, but only 1000 feet wide; APZ I is 2500 feet long and 1000 feet wide; and APZ II is 2500 feet long and 1000 feet wide.

It is because so many of the accidents occurred in the CZ that most of this land at air installations has either been purchased outright by the Air Force, or leased in some fashion to prevent any development within this zone. As for APZ I and II, fewer parcels of land within these areas have been purchased by the Air Force. DODI 4165.57 says that DOD policy is to acquire these areas only when all possibilities of achieving compatible use zoning, or similar protection, have been exhausted and the operational integrity of the air installation is manifestly threatened.

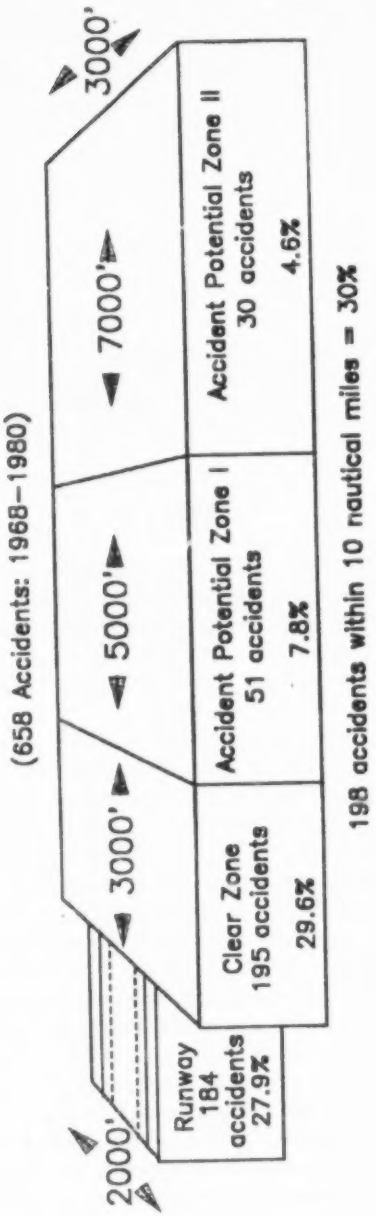
One might well wonder whether this accident potential study has any continued validity, given that some seventeen years have passed since the last accident which was studied occurred. A new study, however, encompassing 1968 to 1980, was conducted to update these figures. Surprisingly, looking at a total of 658 aircraft mishaps, the percentages of accidents on Class B runways in these areas have changed very little. (See chart 4 at page 171).

DOD has taken the data on aircraft accidents and utilized it to develop (as enclosure 4 to DODI 4165.57 something it calls) *Land Use Compatibility Guidelines for Accident Potential (the Accident Guidelines)*, which look at all possible land uses and categorize them as to whether they are compatible with the CZ, APZ I, or APZ II. (See chart 5 at page 172).

As can be seen, DOD views some development in APZ I and II as permissible, but with limitation on the density of the development. For single family dwellings, the amount of suggested density is clearly spelled out. As for other uses, there are no specific DOD guidelines. The Environmental Division of the Directorate of Engineering and Services (HQ USAF/LEEV), however, has suggested guidelines used by the civilian community in limiting the density of development. Under these guidelines, uses are compatible if they do not result in a gathering of people in an area that would result in an average density of greater than twenty-five persons per acre, per hour, during a twenty-four hour period, not to exceed fifty persons per acre at any time. The details on how these guidelines work can be obtained through the Deputy Chief of Staff, Engineering Services (MAJCOM DE) office, or can be found in the Judge Advocate General *Environmental Law Course AICUZ Resource Book* starting with the 1988 edition.

CHART 4

1968-1980 Accident Potential Zones



Source: HQ USAF/LEEV

CHART 5

Land Use Compatibility Guidelines for Accident Potential

Land Use Category	Compatibility*		
	Clear Zone	APZ I	APZ II
Residential			
Single family	NO	NO	YES
2-4 family	NO	NO	NO
Multi-family dwellings	NO	NO	NO
Group quarters	NO	NO	NO
Residential hotels	NO	NO	NO
Mobile home parks or courts	NO	NO	NO
Other residential	NO	NO	NO

Source: Department of Defense Instruction (Encl 4) (Nov. 8, 1977).
* A "Yes" or "No" designation for compatible land use is to be used only for gross comparison. Within each, uses exist where further definition may be needed as to whether it is clear or normally acceptable/unacceptable owing to variations in densities of people and structures.

C. Noise

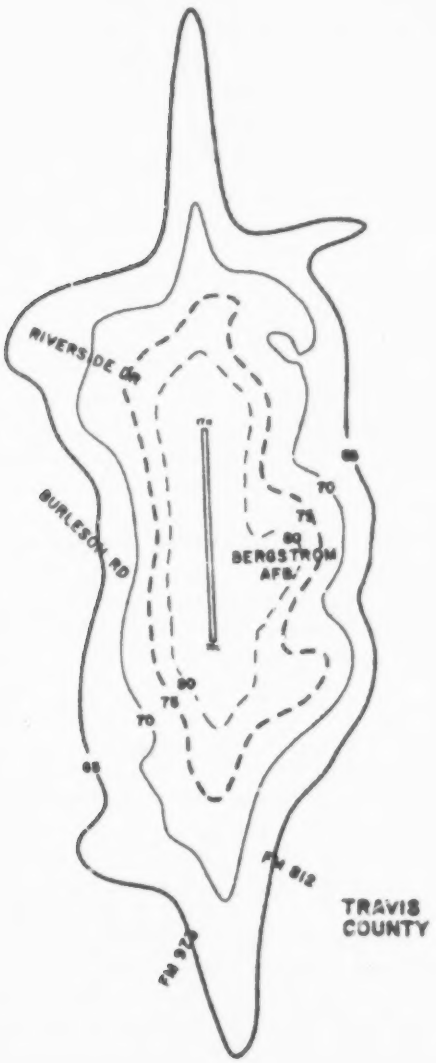
The noise generated by departing and landing aircraft is probably the most significant irritant to the local communities that surround air installations. To determine the extent of noise generated at DOD air installations, the amount and location of noise surrounding an airfield is computed using the *Day-Night Average Sound Level* method (the Ldn method). This is a method of noise modeling that is recommended by the Environmental Protection Agency (EPA).

Over the course of a year, much data is assembled by base DE personnel. Information on the types of aircraft, numbers of operations, flight tracks, time of day, power settings, atmospheric conditions, and ground operations, is obtained to determine the dimensions of the noise zones around the installation. All of this data is submitted to the Air Force Engineering and Services Center (AFESC/DEV). It is used in a computer model, developed and maintained by the Armstrong Aerospace Medical Research Laboratory (AAMRL) at Wright-Patterson Air Force Base, Ohio, called NOISEMAP (one of only two accepted noise models), to develop a noise contour map for each base. Chart 6 (page 173) is the noise contour map for Bergstrom Air Force Base, Texas which reflects the noise zones surrounding the base. The figures represent decibel (dB) levels that were determined using the Ldn method, and they are referred to as the 65 Ldn, 75 Ldn, and 80 Ldn zones.

From a scientific and medical viewpoint, there are good reasons to be concerned about the noise emanating from airfield operations. Studies have shown that such noise impacts on the local community in two interrelated ways. On a physiological level, temporary shifts in hearing thresholds and sleep loss have been documented. On a behavioral level, interruptions in human activities occur, such as work or speech, that result in greater stress. The impact of noise is, therefore, primarily measured in terms of annoyance. Studies on the impact of noise have revealed significant, severe, and very severe annoyance in the face of day-night average decibel levels of 65, 70, and 75 dB, respectively. (See Chart 7 at page 174).

CHART 8

Bergstrom AFB Noise Contours



Source: HQ TAC/DEEV

CHART 7

Effects of Noise on People
(Residential Land Uses Only)

Effects / Day-Night Average Sound Level in Decibels	Hearing Loss	Speech Interference		Annoyance	Average Community Reaction	General Community Attitude Towards Area
		Indoor	Outdoor			
	Qualitative Description	% Sentence Intelligibility	Distance in Meters for 95% Sentence Intelligibility	% of Population Highly Annoyed		
75 and above	May Begin to Occur	98%	0.5	37%	Very Severe	Noise is likely to be the most important of all adverse aspects of the community environment.
70	Will Not Likely Occur	99%	0.9	25%	Severe	Noise is one of the most important adverse aspects of the community environment.
65	Will Not Occur	100%	1.5	15%	Significant	Noise is one of the important adverse aspects of the community environment.
60	Will Not Occur	100%	2.0	9%	Moderate to Slight	Noise may be considered an adverse aspect of the community environment.
55 and below	Will Not Occur	100%	3.5	4%		Noise considered no more important than various other environmental factors.

Source: (June 1980), Guidelines for Considering Noise in Land-Use Planning and Control, Federal Interagency Committee on Urban Noise, Appendix D.

Because of the connection between noise and annoyance, in 1980, the Federal Interagency Committee on Urban Noise through the *Noise Guidelines*, sought to encourage noise sensitive development away from major noise sources; however, the Air Force had done this since 1973. This was done by trying to orchestrate the activities of the major federal agencies and their programs that either are sources of noise (e.g., DOD) or sources of noise sensitive development (e.g., the Veterans Administration (VA)). The EPA, DOD, Department of Transportation, Department of Housing and Urban Development (HUD), and VA are members of this committee and are signatories to the *Noise Guidelines*.

Like DODI 4165.57 and its *Accident Guidelines*, the *Noise Guidelines* have a list of land use compatibility guidelines, though these guidelines are based on noise zones, not accident potential zones. Specifically, for the 55 through 85 Ldn zones, these federal agencies have determined which uses are compatible with the decibel levels experienced in these zones. The premise behind these noise zone determinations can be found in the conclusions about noise and development made in Chart 8. (See Chart 8 at page 176).

Basically, noise levels of 65 Ldn or less are acceptable/compatible with all sorts of development; levels of 66 Ldn to 75 Ldn are normally not compatible with a few types of development; and levels of 76 Ldn and higher are not compatible with many types of development.

Since the primary source of irritation due to noise is in dwelling units, the focus of most planners is on the residential section of the *Noise Guidelines*' suggested uses chart. Although it is "normally unacceptable" to develop within the 66 Ldn—70 Ldn and 71 Ldn—75 Ldn zones, if there is a Noise Level Reduction (NLR) of 25 dB and 30 dB respectively due to construction techniques, development is potentially possible. *However*, residential use in the 66 Ldn—70 Ldn zone is discouraged, and strongly discouraged in the 71 Ldn—75 Ldn zone. There needs to be an "absence of viable alternative development option. . .and an evaluation indicating that a demonstrated community need for residential use would not be met if development were prohibited in these zones . . . ." The definition of a "demonstrated community need" is unclear; however, a good starting argument is that it refers to the entire geographical community surrounding a base, not just individual political entities. Therefore, though the *Noise Guidelines* might appear to suggest that they recommend residential development within the 66 Ldn—75 Ldn zones, the truth is that they do not, and only tolerate development based on a "demonstrated community need" and even then, only with noise level attenuation construction techniques.

D. The AICUZ Shuffle

The last step in the "science of AICUZ" is the development of the final AICUZ work product, the Compatible Use District (CUD) map. Chart 9 (page 177) is Bergstrom's AICUZ CUD map.

Effectively CUD maps are a shuffling of DOD's *Accident Guidelines* and the *Noise Guidelines*. By placing a base's Ldn zones on a map, and placing the standard DOD accident potential zones on the same map, a series of CUD's are created. The land uses that are compatible in each of these CUD's effectively become a weaving of the suggestions found in the *Accident Guidelines* and the *Noise Guidelines*. Therefore, every base's AICUZ study is practically identical in describing what land uses are compatible within these CUD's.

CHART 8

Noise Zone Classification

Noise Zone	Noise Exposure Class	Noise Descriptor			HUD Noise Standards
		DNL* Day-Night Average Sound Level	L_{eq}(hour)** Equivalent Sound Level	NEF Noise Exposure Forecast	
A	Minimal Exposure	Not Exceeding 55	Not Exceeding 55	Not Exceeding 20	"Acceptable"
B	Moderate Exposure	Above 55 But Not Exceeding 65	Above 55 But Not Exceeding 65	Above 25 But Not Exceeding 30	
C-1	Significant Exposure	Above 65 Not Exceeding 70	Above 65 , Not Exceeding 70	Above 30 But Not Exceeding 35	"Normally Unacceptable"
C-2		Above 70 But Not Exceeding 75	Above 70 But Not Exceeding 75	Above 35 But Not Exceeding 40	
D-1	Severe Exposure	Above 75 But Not Exceeding 80	Above 40 But Not Exceeding 80	Not Exceeding 45	"Unacceptable"
D-2		Above 80 But Not Exceeding 85	Above 80 But Not Exceeding 85	Above 45 But Not Exceeding 50	
D-3		Above 85	Above 85	Above 50	

* HUD, DOT and EPA recognize L_{dn} = 55 dB as a goal for outdoors in residential areas in protecting the public health and welfare with an adequate margin of safety (Reference: EPA "Levels" Document). However, it is not a *regulatory* goal. It is a level defined by a negotiated scientific consensus without concern for economic and technological feasibility or the needs and desires of any particular community.

** The Federal Highway Administration (FHWA) noise policy uses this descriptor as an alternative to L_{10} (noise level exceeded ten percent of the time) in connection with its policy for highway noise mitigation. The L_{eq} (design hour) is equivalent to DNL for planning purposes under the following conditions: 1) heavy trucks equal ten percent of total traffic flow in vehicles per 24 hours; 2) traffic between 10 p.m. and 7 a.m. does not exceed fifteen percent of the average daily traffic flow in vehicles per 24 hours. Under these conditions DNL equals $L_{10} - 3$ decibels.

Source: Noise Guidelines (Federal Interagency Committee on Urban Noise)

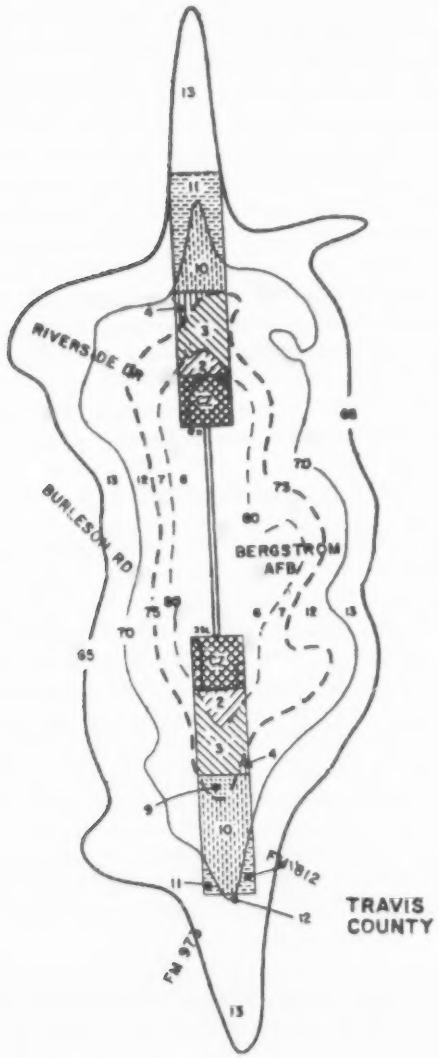
In conclusion, there are two basic issues of great contention in a typical AICUZ study. It is how these issues are resolved that determines the amount and type of development around different air installations. First, in those CUD's that contain only an accident potential zone (and not a high noise area), what kind of density of development should be allowed? Second, in those CUD's in the 66 Ldn—75 Ldn zones, is there a demonstrated community need to allow development despite the annoying presence of noise? The resolution of these and other issues is the subject of the "Law of AICUZ" in the section below.

II. THE LAW

There are two aspects to the "Law of AICUZ:" regulatory implementation and judicial challenges.

CHART 9

Bergstrom AFB AICUZ Map



Source: HQ TAC/DEEV

A. Regulatory Implementation

The AICUZ program is implemented through the local government's police power over land use, zoning, and building codes. The Air Force encourages incorporation of AICUZ into the overall local land use planning process, rather than create a separate set of land use regulations applicable only to air base environments.

The Air Force's goal is that AICUZ should not have to be program that is sold to local community, but instead should be a cooperative information and assistance program. If the local community refuses to incorporate an AICUZ study into its local planning process, there is an important check on inappropriate development within the accident potential zones and noise contour areas that does not tend to get local government's attention.

The *Guidelines for Considering Noise in Land Use Planning and Control* spell out both HUD's and VA's intention to follow DOD's accident potential zone determinations and noise contour studies. The nature of HUD's and VA's involvement is their refusal to provide assistance (e.g., guaranteeing home mortgages) for construction in accident potential zones, or construction of new noise sensitive uses. The extent of HUD's and VA's involvement will vary from project to project. Generally, they will not assist projects within the accident potential zones, or within noise contour areas 65 Ldn and higher. There may be occasions as described above, though, when assistance will be given to construction in the 66 Ldn—75 Ldn zones, if sound attenuation construction techniques are used to reduce the decibel levels, and a "demonstratec community need" has been found.

B. Judicial Challenges

Judicial challenges to AICUZ could arise in at least two ways, one direct and one indirect. First, a landowner who believes that the AICUZ study and the Government's implementation of the study has diminished the value of his land may try to sue the local government or the Air Force (or both) under the theory that there has been an unconstitutional "taking" of property without "just compensation" in violation of the fifth amendment. Second, a landowner who experiences noise and vibration caused by aircraft may try to sue the Air Force arguing that an Air Force crated nuisance amounts to a taking of the land ajoining or underlying the source of the noise and vibration. Such a litigant might use the AICUZ study as plaintiff's exhibit #1 as proof of the Air Force's activities (and as a result, undermine the AICUZ study and Air Force operations).

The direct challenges to AICUZ take the form of "inverse condemnation" suits brought in the U.S. Court of Claims pursuant to 28 U.S.C. § 1491. In these suits, the plaintiff is trying to force the Government to condemn property and pay the just compensation the fifth amendment requires. The argument is that the zoning restrictions created to implement AICUZ (e.g., limiting the density of development in the APZ's or limiting residential construction in the 66 Ldn—75 Ldn zones) have so severely limited the use of the property, and as a result, property values, that a taking has occurred.

The U.S. Supreme Court has recognized that a "taking" can occur due to oppressive governmental limitations on the use of property. The key question to be answered is the extent of harm suffered by the property owner. In *Penn Central Transportation Co. v. City of New York*,[1] the court held that the answer to this

1. 438 U.S. 104 (1978).

question depends upon the particular circumstances of each case, and that mere reduction in value of the land due to restrictions on its use is not enough for a taking to be found. When the diminution in value makes the land no longer "economically viable" a taking can be found to have occurred. Generally, if the land can be economically used for some purpose, then a taking will not be found. The case often cited for this proposition is *Hadacheck v. Sebastian*,[2] where the court upheld a zoning law that caused a lowering of the plaintiff's property value from $800,000 to $60,000.

While the case law upholding zoning ordinances has been generally supportive of the Government's power to limit development, the recent case of *First English Evangelical Lutheran Church v. County of Los Angeles*,[3] was initially greeted with a great deal of concern by local government zoning officials. The case was initially cited as severely restricting the zoning power. Upon close examination, however, *First English Lutheran Church* stands for the proposition that if a taking has occurred, a plaintiff is entitled to damages from the date of the taking, not just from the date of the court's ruling that a taking has occurred. The case did not further define when takings occur and did not develop a test for how damages should be measured for such temporary takings. Prior to this case, if a taking had been found, the Government had two recourses: pay the plaintiff just compensation for the property, or rescind the ordinance. The impact of *First English Lutheran Church* is that zoning authorities will probably avoid drafting overreaching zoning ordinances that might give rise to lawsuits.

The above discussion dealt with suits against local zoning authorities. There is also some case law relating to situations where the Federal Government has been sued under a taking theory for its attempts to influence local zoning authorities. In *De-Tom Enterprises, Inc. v. United States*;[4] *Nalder v. United States*;[5] *Bodine v. United States*;[6] *N.B.H. Land Company v. United States*;[7] and *Gilliland v. United States*,[8] this theory was defeated (in part) because the court found no fault in the manner in which the federal agency tried to influence local government. It was also defeated in part because local government action was not considered a taking to begin with. In *De-Tom Enterprises, Inc.*, where the Air Force at March AFB, California (in the form of the Staff Judge Advocate and the Base Commander) was accused of lobbying local zoning authorities not to approve a rezoning request because the request was inconsistent with AICUZ, the court held that:

> [T]he Air Force was a powerful adjoining landholder, but so could be a large private manufacturer or comparable enterprise, or an organized group of citizens intent on preserving the environment or the character of their locality. In none of these cases would the intervention of the neighbor to persuade a county entity against rezoning the claimant's land constitute an eminent domain taking by the neighbor—whatever else it might be. The United States is thought to have a deep pocket and it is tempting for owners to try to shift to it the costs which they cannot or do not wish to impose on the local entity which actually undertakes the zoning, but the fundamental point is that it is that agency (here the County Board) which adopts, and has the power to adopt, the allegedly injurious course, and the federal agency (here the Air Force) is only playing the role of an influential affected landowner trying to persuade the county body to accept its position.[9]

2. 239 U.S. 394 (1915).
3. 482 U.S. 304, 96 L.Ed.2d 250 (1987).
4. 552 F.2d 337 (1977).
5. 217 Ct. Cl. 686 (1978).
6. 210 Ct. Cl. 687 (1976).
7. 576 F.2d 317 (1978).
8. 228 Ct. Cl. 709 (1981).
9. *De-Tom Enterprise*, 552 F.2d 337 (1977).

Under the indirect approach, an adjoining landowner may try to argue that the noise and vibration caused by certain Air Force flying activities is a nuisance that has caused a taking. As a remedy, the landowner will probably be seeking damages for any physical damage caused his property, personal and real; damages for the annoyance or distress suffered due to the noise and vibration; and a cessation of the offensive flying activity, a total condemnation and purchase of the entire land, or a partial condemnation and purchase of an easement over the land.

If the landowner tries to file a claim with the Air Force for harm suffered due to noise and vibration, the typical response will be to try to address that portion of the claim that relates to physical damage to the property, and annoyance/distress reasonably attributable to the damage. Such harm is usually addressed under the Military Claims Act (MCA),[10] versus the Federal Tort Claims Act (FTCA).[11] Finally, to the extent feasible, modifications in flight patterns are a possibility to accommodate the desire for a cessation of the offensive flying activity. The remainder of such a claim (i.e., damages for annoyance not attributable to physical damage to property, demands for cessation that cannot be accommodated, and claims for compensation for total or partial condemnation), however, is usually denied on the overall theory that the plaintiff's claim is for a taking for which MCA and FTCA specifically do not allow recovery.

If the landowner seeks recourse in the U.S. Court of Claims for the taking portion of the claim, there will be a need to deal with a complicated series of cases that wrestle with the issue of whether the noise and vibration caused by aircraft amount to takings of adjoining or underlying property. These cases seek to balance society's need that navigable airspace be predictable in its location and dimensions, regardless of the personal desires of the affected landowners, against a citizen's right to quiet enjoyment of his property.

From this matrix of cases, it can be said that courts require the noise and vibration to cause a direct and immediate interference with the use and enjoyment of the affected land; that the interference must be so substantial that it amounts to a taking; that flights within the realm called "navigable airspace" (as the term is variously defined by FAA regulations) are viewed favorably with somewhat of a presumption of regularity; but that under the right set of circumstances, even flights within navigable airspace can be found to cause a taking if the interference is substantial. Several cases expound these principles.[12]

III. CONCLUSION

Although many Air Force bases have experienced and continue to experience varying degrees of encroachment due to development pressures, the AICUZ program has been a remarkable success. One of the reasons the AICUZ program has been a success is that most communities view the AICUZ studies as fair representations of the impact of Air Force operations. However, some communities have occasionally questioned the reliability of the data, as well as the conclusions and suggestions. Partly to ease local government's concerns about the neutrality of

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10. 10 U.S.C. § 2733.
11. 28 U.S.C. §§ 1346, 2402, 2671 and 2672.
12. United States v. Causby, 328 U.S. 256 (1946), ...ron v. United States, 311 F.2d 798 (1963); Avery v. United States, 330 F.2d 640 (1964); Brannin... v. United States, 654 F.2d 88 (1981), *recon.* 784 F.2d 361 (1986); Ramirez de Arellano v. Weinber...er, 745 F.2d 1500 (1984); and Katsos v. Salt Lake City Corp., 634 F. Supp. (D. Utah 1986).

AICUZ studies, and partly to increase acceptance of the Air Force's input into local land use planning, joint land use studies are now being proposed and conducted at selected Air Force bases.

These studies involve the DOD's Office of Economic Adjustment providing partial funding for land use studies that the Air Force and the local community work together to prepare. As in the case of an AICUZ study, joint land use studies also involve creating noise contour maps (although sometimes using a different methodology). The hope is that when such studies are jointly prepared, usually using the services of a jointly approved third party contractor to develop noise contour maps, the results of these studies will be accepted as reliable indicators of acceptable community development.

In the final analysis, however, these studies are not considered a replacement for AICUZ. Where there would be a conflict between the noise contours of AICUZ and a joint land use study (JLUS), the Air Force position is that AICUZ information will be relied upon. Friction could result with the local community because the Air Force might not accept certain portions of the JLUS.

Nonetheless, the unvarnished truth is that the AICUZ plan really does give local planning and zoning agencies a solid grasp of the impact of Air Force operations on surrounding communities. It is this quality of the typical AICUZ study that results in AICUZ continuing to be a vital conduit between the Air Force and local government, particularly with the increasing pressures for development being experienced by most communities.

Defense of Environmental Issues in the Administrative Forum

LIEUTENANT COLONEL MICHAEL J. VAN ZANDT, USAF

When a base commander receives a notice of violation or an administrative order from a state or federal environmental regulatory agency, the commander will seek assistance from the environmental planning function in civil engineering and the staff judge advocate to advise on the response to the alleged violation.[1] In preparing a response, the civil engineers should take responsibility for assembling the facts.[2] The staff judge advocate, on the other hand, must view it as an adversarial situation which may threaten the base with legal liability. Accordingly, any notice of violation or administrative order must be treated as a matter in litigation under Air Force Regulation 110–24.[3] A case file should be opened, case-related reports made, and research begun for the defense of the case. Inaction or even delay by the base to formulate a defense may result in foreclosing the option of challenging the regulatory action. Timely response preserves the legal rights of the base to protect a base function from curtailment or possible shutdown by the outside agency.

Many states have strict administrative procedures for adjudicating charges of environmental violations.[4] Upon receipt of the notice of order, the clock starts to run on the time to appeal the regulatory action. This period varies from state to state but will usually last from thirty to forty-five days. The appeals process may require a written response, the scheduling of an informal meeting between the parties, or the filing of a formal appeal of the notice or order.[5] The most severe penalties for not answering the action are the prevention of any defense to the charge, an issuance of a unilateral final order, and an imposition of corrective measures by the regulators without regard to mission impact.[6] Such corrective measures could mean an action to cease and desist the offending activity and the potential imposition of administrative fines and penalties.[7] Appeal after the time has run can be futile, successful only if the base can show there was a lack of jurisdiction or a legal error. Even if successful on a jurisdictional or legal basis, untimely challenges to the facts may be forever barred.[8]

There are practical as well as legal reasons for the timely challenge to administrative enforcement actions. The first and foremost reason is to enhance one's chances of winning the case at the administrative level by marshalling the facts to prove the merit of the position. If the case can be defended on the facts, then those facts should

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1. *See* Air Force Reg. (AFR) 19–1, Pollution Abatement and Environmental Quality (9 Jan. 1978).
2. *Id.* at para. 2b.
3. *See* AFR 110–24, para. 3–11b, Litigation, Tax Disputes, Administrative Proceedings, and Legal Process, (10 Nov. 1982).
4. *See, e.g.*, Ohio Rev. Code 3745.04; Va. Code 10.1—1309.
5. *See, e.g.*, Ohio Admin. Code 3746–5–13 (1988).
6. *Id.*
7. *See, e.g.*, Va. Code 10.1—1307 D (Supp. 1988).
8. This is based upon a limited standard of review such as "substantial evidence" or "clearly erroneous." *See* Strumsky v. San Diego Employees Retirement Assn., 11 Cal. 3d 28, 520 P.2d 29, 40 (1974).

agencies[76] prepare a report on their annual review and monitoring of the effectiveness of its procurement program. Where agencies have elected to use a case-by-case approach or a substantially equivalent alternative, they should demonstrate in the report that their preference program results in procurements containing recovered materials to the maximum extent practicable.[77] Federal agencies should take affirmative steps to make their reports available to the public, as an aid to state agencies and contractors in complying with the Act.

RCRA 6002(c)(1) of RCRA contains four limitations on a procuring agency's obligation to purchase an item designated by EPA: (1) the item is available only at an unreasonable price; (2) a satisfactory level of competition cannot be maintained; (3) the item is not reasonably available within a reasonable period of time; or (4) the item fails to meet the applicable specifications. Commenters on several of the guidelines stated that a "reasonable price" should include a price preference. However, EPA determined that RCRA 6002 does not provide explicit authority for EPA to authorize or recommend payment of a price preference or a set aside. Therefore, unless an agency has independent authority to provide a price preference or to create a set aside, EPA believes that a price is "unreasonable" if it is greater than the price of a competing product made of virgin material.[78]

As with price, determinations of "satisfactory" competition must be made in accordance with federal procurement law.[79] Using minimum content standards, as were recommended for paper and lubricating oils procurements, will automatically result in excluding potential bidders that market only virgin products or those below the minimum standards. Procuring agencies must learn through experience what minimum standard will assure competition and yet maximize the use of recovered materials. If designated items are not reasonably available, procuring agencies are not required to buy them, at that time.[80] While EPA declined to list available sources in the guidelines, information on current suppliers is available in the dockets for the guidelines, or through the trade associations referenced therein. In the case of lubricating oils and retread tires,[81] performance should not normally be a reason for declining to buy designated items, as both have certification programs which assure

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76. While the guidelines refer to "procuring agencies," the EPA acknowledged that in the case of nonfederal procuring agencies and contractors there is no reporting requirement in section 6002 and the Freedom of Information Act would not cover their reports. Therefore, while EPA includes these agencies in the recommendation to make public reports, reporting is less relevant unless the agency or contractor voluntarily chooses to make it available to the public. Preamble to the Retread Tires Guidelines, *supra* note 30 at 46,569.

77. 40 C.F.R. § 250.24(c);Preamble to the Final Paper Guidelines, *supra* note 42 at 23,558.

78. Where specifications require a minimum recovered material content, there is no way to guarantee that every item procured under these specifications was procured at a price no greater than would have been paid in the absence of a minimum content specification. The EPA interprets the reasonable price provision in such circumstances to mean that there is no projected or observed long-term or average increase over the price of comparable items that do not contain recovered materials. Preamble to the Final Paper Guidelines, *supra* note 42, at 23,559; Preamble to the Lubricating Oils Guidelines, *supra* note 27, at 24,712.

79. *See*, e.g., FAR 14.407–1 for sealed bids and 15.804–3(b) for negotiated contracts.

80. Procuring agencies are required to promote their affirmative procurement programs, however, in order to encourage availability. In addition, procuring agencies should review their procurement practices, and revise them if they discourage the availability of an item for particular procurements.

81. Once a lubricating oil containing re-refined oil carries an American Petroleum Institute (API) designation or is included on the QPL, its performance has been verified to meet applicable specifications. Similarly, retread tires or retreading facilities must pass an inspection and certification that ensure adequate performance. While several commenters questioned the performance of retread tires under certain conditions, the preamble to the guidelines contains much information that in most instances retread tires can perform comparably to virgin tires. Preamble to the Retread Tires Guidelines, *supra* note 30 at 46,570.

the quality of items containing recovered materials. If a procuring agency factually determines that use of a designated item in a particular circumstance will not meet required performance standards, it should document the finding and reference such documentation in the solicitation.[82]

Various parts of RCRA 6002 refer to dates by which procuring agencies must have completed or initiated a required activity. Except for the obligation to revise specifications to eliminate discrimination against recovered materials, the other obligations are required one year after publication of the applicable guidelines.[83] The Office of Federal Procurement Policy is responsible for overseeing and coordinating the implementation and reporting to Congress of actions taken by federal agencies to implement the requirements of the section.

As the public and Congress become increasingly concerned with the mounting problem of disposing of solid waste, we can expect greater impetus to promote recycling as an acceptable alternative, and a continued emphasis by EPA to promulgate more recovered material guidelines as one method of using federal procurement to encourage this alternative.

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82. *Id. See also* 40 C.F.R. § 250.13(b) for an explicit recommendation in the paper guidelines that agencies should document determinations that a product containing recovered material will not meet performance needs.

83. 40 C.F.R. §§ 250.25; 252.25; 253.25.

1989/631-002/03066 AUGAFB,AL(893405)2560

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